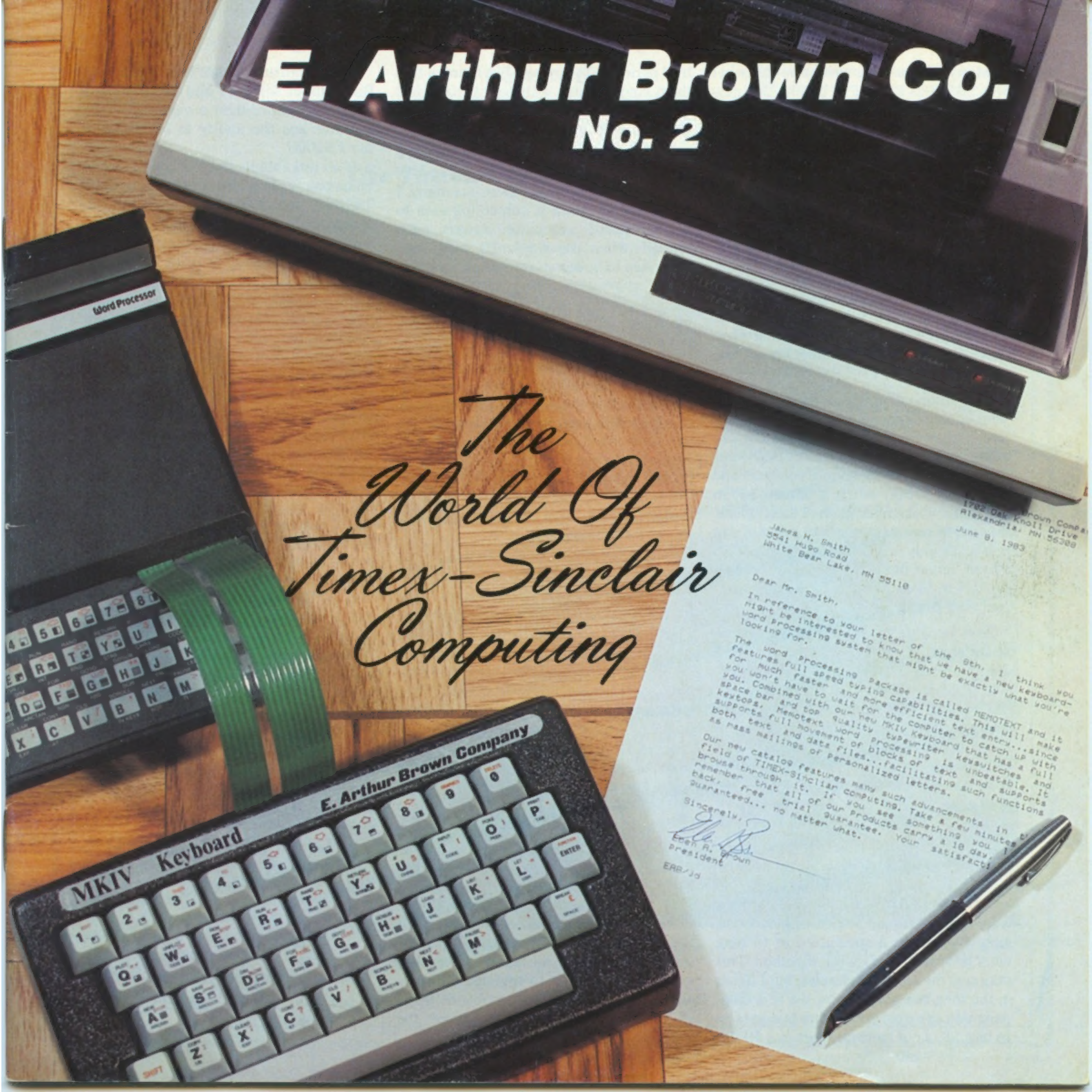
E. Arthur Brown Co.
No. 2

The World Of Timex-Sinclair Computing



The Future of Timex-Sinclair Computing

Many of you have written to ask what was taking us so long in getting this new catalog completed. Well, a quick glance through its pages should give you the answer. The explosion of new products for the Timex-Sinclair 1000 has been so rapid, it's been tough to settle on a product line before going to press with a catalog. This overwhelming flood of technology has presented two dilemmas for computer users: First, which products are compatible with which other products? Many of you have gone to great expense to buy "this" RAM pack, "that" interface, and "those" programs... only to find that when they all were plugged in at the same time, nothing worked!

The second dilemma is one concerning your choice of a computer. What with the new Timex-Sinclair 2000 series coming along, is it wise to keep adding onto your TS1000/ZX81? Or, should you want and buy the TS2000 when it comes out in November-December. Both of these dilemmas are of serious concern to many of you and justifiably so. With that in mind, I'd like to "clear the air" a bit. And the first topic I'd like to address is the compatibility problem.

Just because a peripheral expansion module has a through plug on the back doesn't mean it's automatically compatible with everything else that plugs onto the back of your computer. Some have internal programming that occupies the same memory space as other add-ons. Others transfer data at different baud rates (bits per second) and can't communicate with each other. And, in other cases, programs themselves are not designed to work with certain peripherals.

I admit that we've unwittingly sold incompatible components in the past... in most cases that's how we found out they were incompatible! But, in this new catalog, I've made a special effort to note what products won't work together. This may cost me some quick sales, but I figure in the long run you'll know we're a company you can trust your future business to. In fact, all of our hardware carries a 10-day trial period... if you don't like them or find them incompatible with your system, just return them in brand new condition. We'll give you your money back.

As for whether you should stay with the 1000 series or wait for the 2000 series of computers, the considerations are many. I figure the dilemma is something akin to what AppleII computer owners went through when the Apple III came out. They had to be wondering if their systems would become obsolete..., if software designers would forget them... or, if it would mean an end to the development of new peripherals.

In reality, nothing changed at all. In fact, the AppleII computer is probably *still* outselling the Apple III. Why? Well, it just makes good business sense. There are tons more peripherals and software available for the Apple II, so people buy it on that basis. And, because so many people buy it, the peripheral and software designers keep right on developing new things for the Apple II!

I figure this is probably the way the TS1000 and TS2000 computers will go... at least for two or three years. The TS1000/ZX81 has been around for some time now. Independent software and periphal designers have had access to the machines and have been developing some wonderous things for them. Some of the best have only just been introduced in the last 3-6 months. With such a plethora of technical support, there's no way the machine can become obsolete. In many ways, the support technologies assure this. For example, the Basicare System allows your TS1000 to meet and surpass the capabilities of the TS2000!

Make no mistake about it. The TS2000 will be a better *machine*. In fact, we're very excited about it here. But if you're thinking it will automatically have all of the software and peripherals the TS1000/ZX81 has, you're mistaken. Timex has not made it available to anyone on the outside. Consequently, the peripherals won't go into development until *after* the TS2000 reaches the marketplace.

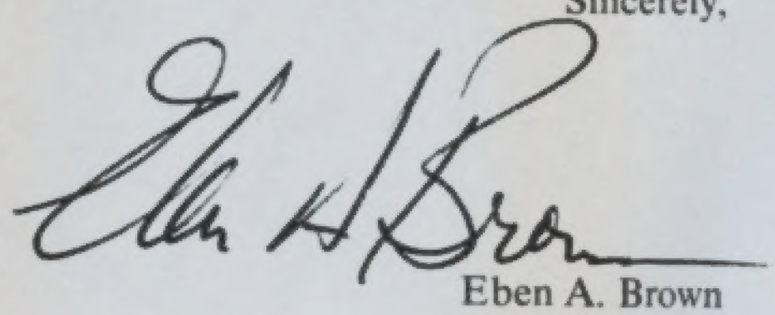
The *promised* release is in November. But without software and peripherals, it could take more than a year before the machine has the ability to out compute the TS1000.

If all this sounds like I'm trying to convince you to jump into computing with the TS1000, you're right! Let's face it..., the computer is downright cheap. If you're waiting for the price to go down, you could be waiting forever. The price will always go lower on computers. The year after you buy it, no matter when you buy it, the price will be lower. The same goes for all of the periphals and software. If you wait, you may save $10-$15. But think how valuable a computer could be to you *now*. If you could do just a few jobs faster with it *now*, you could probably save 100 times more than the $10-$15 you might save by waiting for prices to drop. What's more, by getting into computing *now*, you're just that much ahead of the next person in finding jobs, conducting business, or education. Computers are not going to go away. So, the sooner you get one and learn to use it, the sooner you become a part of the future.

Well, so much for my soap box on Timex-Sinclair computing. A lot of time and effort have gone into this catalog -- in the hope of bringing you the products you need and *want* for your computer. All of them were examined carefully to be sure they are of good quality at a fair price. The product descriptions were written with an eye toward what I figured you'd want to know. But if ever you need more information, please don't hesistate to call or write. We'll do our best to answer your questions.

I thank you for your business and look forward to serving you in "the future of Timex-Sinclair Computing."

Sincerely,



Eben A. Brown
President

The Timex-Sinclair 1000 & 1500

While the TS1000 is probably most famous for being the first computer to break the $100 price barrier, there are several other reasons for buying it. Benchmark comparisons with computers costing 10 times as much have shown it to be as good, or better than any computer on the market. And with the tremendous amount of inexpensive peripherals available, the TS1000 may be all the computer you'll ever need. That's right! *All the computer you'll ever need.* If you don't believe that, just look at the new Basicare system... capable of a 16 Bit CPU conversion (like the IBM PC) giving you up to 4 Mega-Bytes of instantly accessible memory. Right now, you can only get 512 Kilobytes on the IBM-PC.

Many of our customers have telephoned to say they exchanged a Texas Instruments, Apple, or Commodore computer for an inexpensive Timex-Sinclair 1000! Why? Well, for one thing, it has quite a bit of capability programmed right into its operating system. Features like: one touch entry of BASIC commands like PRINT, RUN, LIST, etc. On other computers you must type out the whole word. The TS1000 does it with one key. The machine has automatic detection of syntax errors. It tells you when you've incorrectly typed information and should try again. Other computers just give an error code... they don't tell you what you did wrong. You get complete graphics capabilities. You can do multidimensional strings and numerical arrays. You can do the full range of mathematical and scientific functions... from basic addition, subtraction, and multiplication to trigonometric functions like sine, cosine, tangent, etc. You can program in BASIC or machine language or both.

Try to get all of these features on another computer for the same price. You'll find that, where other machines might come close, maybe even give you a full size keyboard to boot, it will cost you a pretty penny to upgrade to the capabilities of the TIMEX. Shoot, if you want a full size keyboard, we've got quite a selection for under $100!

And that brings to mind another great advantage to the Timex-Sinclair 1000: not only is the computer inexpensive, its peripherals follow the same pricing guidelines. Try to put 32K into a Texas Instruments computer and it will cost $400 -$500. 64K costs only $150 on the Timex!

The stock TS1000 comes with 2K of RAM (expandable to 1 megabyte), 40 key membrane keyboard, a power pack for any 110 volt outlet, a set of cables for connection to your TV and cassette recorder, and an instruction manual.

The new Timex-Sinclair 1500 computer has every feature of the TS1000 and more. To begin with, it features a moving, raised button keyboard for easier typing.

The Timex-Sinclair 1000 Computer.

(See Order Blank for Prices)

The Timex-Sinclair 1500 Computer.

It contains 16K of RAM internally, and it will be capable of handling some new solid state software cartridges. Other that that it's basically a TS1000 in a more stylish case. This means it's fully compatible with all of the hard and software add-ons already available for the TS1000.

The new TS1500 comes with a power pack, TV and cassette cables, a demonstration tape, and an instructional manual.

(See our order blank for prices on the TS1000 and TS1500 computers.)

Great Memories

As is true of any computer, the more memory you have, the more useful the machine will be. And the Timex-Sinclair TS1000/ZX81 is no exception. Fortunately, unlike other computers, memory add-ons are relatively inexpensive. Where a 16-32K upgrade could cost anywhere from $500 to $2,000 on other computers, it would cost only $50-$100 on the TS1000.

The subject of memory and how much you need can get pretty confusing at times. The terminology is what throws most people. So here's a brief explanation. "RAM" means Random Access Memory. It's just empty space that you can fill up with data or programs. You can erase it easily by just turning the computer off. Putting data into RAM is easy. You just start typing it in. "ROM" is Read Only Memory. This is normally what the computer's operating system might be on. You can't change the ROM... at least not very easily. You can't "write" data into it... you can only "read" what's already there. "EPROM" is Eraseable, Programmable, Read Only Memory. Actually, it's ROM memory, only you can take it out, erase it under ultra violet light, and reprogram it. A lot of solid state program cartridges are on EPROM memory. It's kind of convenient to have solid state memory you can program yourself. But, programming EPROMS takes special equipment. The average computer user doesn't have this, so the convenience is kind of lost.

Choosing your own memory will take some planning. For example, how much will you need? One way to figure it is that each byte equals one character... one letter, number, or graphics symbol. A 16K RAM will hold 16 Kilobytes or 16,000 bytes or 16,000 characters. This isn't *exactly* accurate, but it's close enough.

Another criteria for choosing your memory is the software available for it. Unless you do your own programming, you'll want to use commercial software. Until recently, most commercial programs were written only for 16K of RAM. However, now that isn't the case. With the new spreadsheet and word processing programs from Memotech, the memory adjustable "Mega" integrated software, and other big memory programs, there are plenty of uses you can put a large RAM to. If you absolutely *must* have more room, but only have a 16K program, the Basicare System will solve your problems. It has the ability to store the same program with different data as many times as you like... up to 4 megabytes.

Probably *the* most important consideration when choosing your RAM is reliability. The small, box type RAMs have a reputation for "Wobble Crashing." That is, they aren't very securely connected to the computer and can wobble and break their electrical contact. The result is as if you just turned off your computer... all of your data is lost. Actually, if you choose your RAM from the ones offered here, you won't have to worry about wobble crashing. We've only included memories that don't do that.

We've shopped the world to find the most reliable memories available. Our memopaks are as functional as they are good looking. Our Mark IV memories have a battery backup... so they won't forget your data when the power suddenly shuts off. And, our Basicare modules allow you to expand your memory up to a possible 4 megabytes. Whichever system you choose, you can be sure we will back it up with a 10-day, money back, free trial.

Memopak RAMS

The memopaks are generally considered to be the top of the line as far as basic RAM modules go. They're designed to fit securely on the back of your computer to prevent wobble crashing and, to give an aesthetically pleasing appearance to your computer. They include such features as a through plug so that other accessories may be plugged onto the back and switches... for more effective use of memory.

You see, your TS1000/ZX81 is capable of addressing a maximum of 64K of memory at any one time. There's the 0-8K region that's occupied by your computer's operating system. There's the 8-16K region that is sort of reserved for more operating system features. And, there is the 16-64K region... where your RAM is usually located. Normally, you can't access the 8-16K region of your memory unless you have a 64K RAM. Otherwise,

Memopak RAM Modules.

(See Order Blank for Prices)

the 16 and 32K RAMs are located above the 8-16K region. This makes for economical use of memory when programs are on EPROM cartridges. The EPROM locates the program in the 8-16K region... thereby saving all of your RAM for data.

The switches on the backs of memopaks control the area of the memory they address. For example, two 16K RAMs can be "piggy backed" to give a total of 32K with the right switch combinations. Without the switches, they'd overlap the same area of memory.

The 64K memopak is the only one capable of directly addressing the 8-16K area. More experienced computer users will be most able to use this facility. Actually, the 64K RAM provides a useable 48K of RAM on top of the operating system and the 8-16K region. Since it *does* address the 8-16K region, it must have that area switched off when you use an EPROM loaded program. That's because the EPROM addresses the 8-16K area too. and if both RAM and EPROM address the same area they cancel each other out.

This is important. If you buy a 64K RAM other than a Memopak and wish to use EPROM based software, be sure your 64K RAM has the ability to switch out of the 8-16K region of memory. Otherwise, your EPROM software will be useless.

Memopaks are probably the finest of the standard RAM modules. They're reliable, good looking, and strongly backed by their manufacturer. However, at the time of this writing, some of them aren't compatible with the Timex 2040 printer. To assure no problems with *your* Memopak, we've supplied Memotech with 2040 printers to test all of the RAM modules they ship us. If you order your Memopak from E. Arthur Brown Company, you can be sure it will be compatible with your 2040 printer... whether you have one now or plan to buy one in the future.

All Memopak modules are encased in form fitting, crash proof, black anodized aluminum cases for maximum shielding against radio interference. They carry a 6 month repair or replacement guarantee as well as our 10 day, money back free trial.

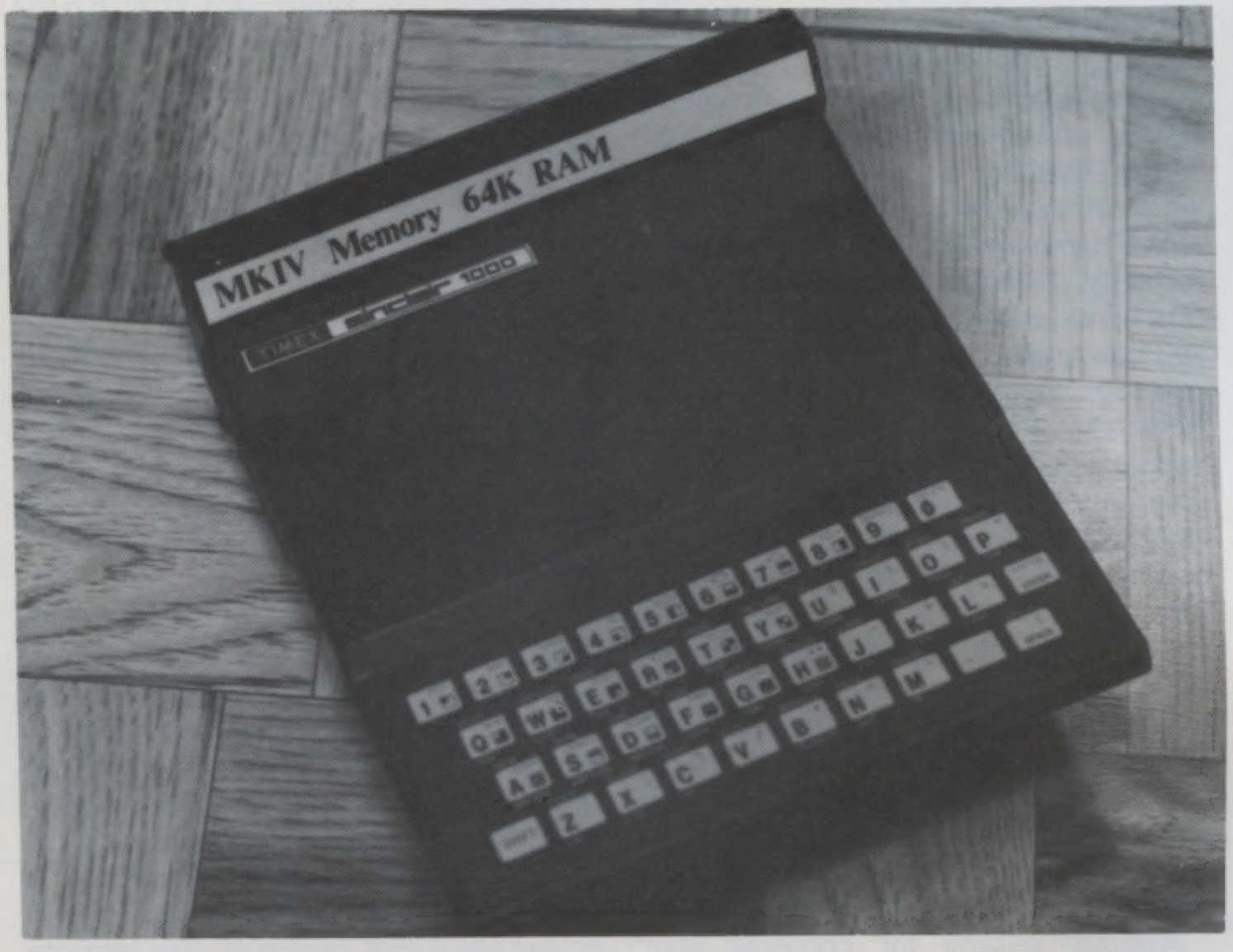
(See our Order Blank for memopak Prices.)

MarkIV Memories

There are always improvements to be made and that's exactly what our "MarkIV" is. In the case of a sudden power outage or voltage "brown-out" other RAM modules lose their contents. This could cost you quite a bit of programming or data entry time because you'd have to re-do everything. Not so with the "MKIV Memories"

These new RAM modules feature a battery back up system. Should the power go off, they'll keep your computer running for up to 30 minutes... enough time to SAVE your work on cassette.

The MKIV Memories come in 16 and 64K versions and feature memory block switches. You needn't worry about compatibility with EPROM software in the 8-16K area of memory. Experienced programmers will appreciate the 64K version especially. It allows copying and modification of the original 8K ROM operating system. This opens up the possibility of custom operating systems which might include disk capabilities, upper and lower case letters, high resolution graphics,



The MKIV 64K RAM Module.

color, and even sound! And all of this is possible in that one 64K Mark IV Memory Module!

MarkIV memories also feature an EPROM socket. If you have certain routines you use all of the time, have them put on EPROM and plug it into your ultimate memory. You can address it to any memory location.

These new memory modules are housed in aluminum cases for good shielding and include a reset switch to boot! They carry a 90 day warranty and are also backed, of course, by the E. Arthur Brown Co. 10-day, money back, free trial.

(See our Order Blank for Mark IV Memory Prices.)

The Basicare Organic Micro System

The concept of an organic microcomputer system, at least as far as the Basicare approach is concerned, is completely different from anything you've read so far. The idea behind it is that you shouldn't have to scrap your TS1000/ZX81 system when your computing needs outgrow it. The "Organic" system will grow right along with you. The advantages of this are many. For one thing, you'll never have to relearn another computer language, operating system, or keyboard. For another, you won't have to spend add-on money for anything but the features you need.

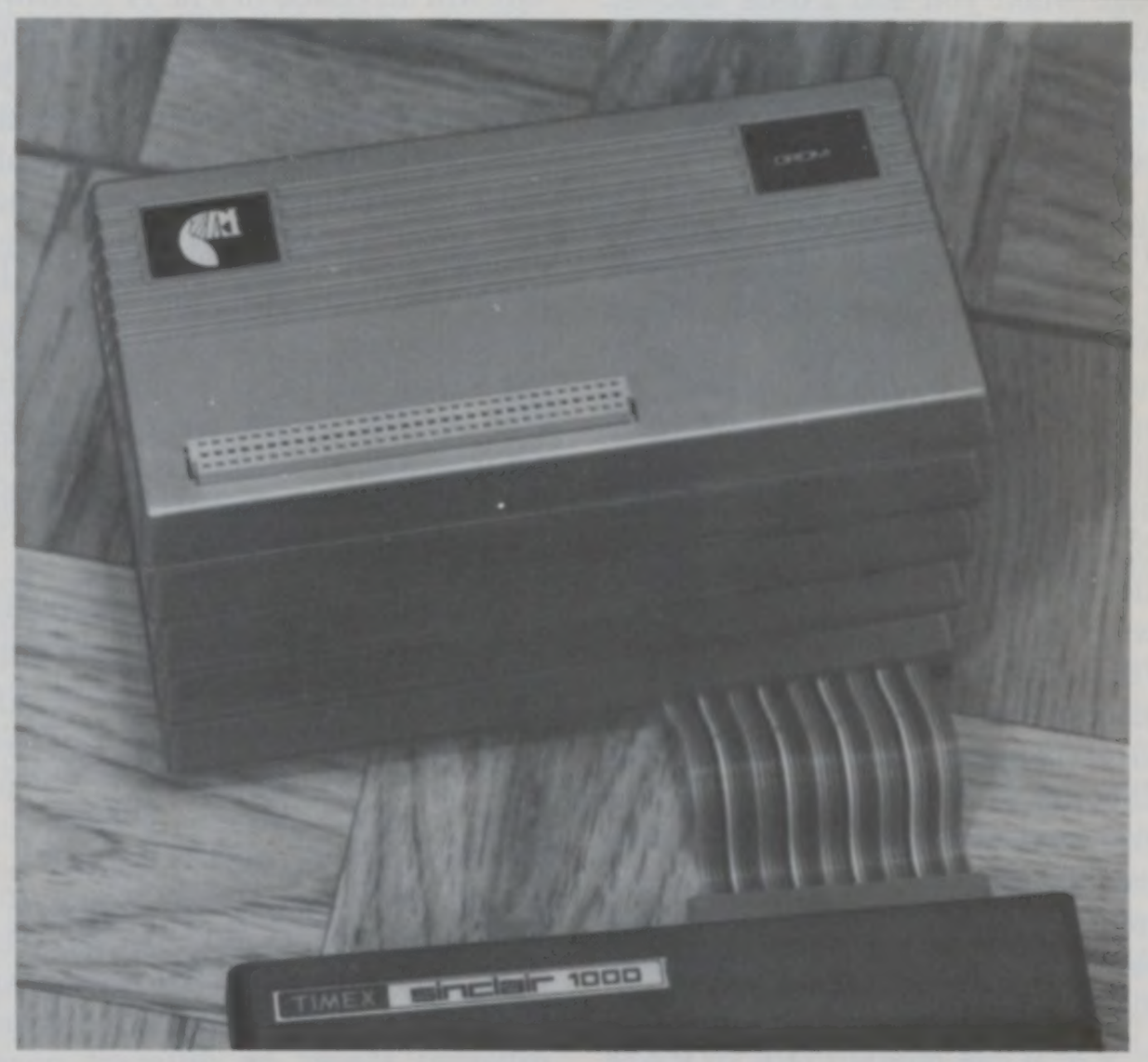
Granted, other add-ons for your TS1000/ZX81 are intended to allow you to grow within the system. But, until now, that growth has been limited to a total of 64K of RAM... of which only 48K is directly addressable. The Basicare system, in its present form, allows expansion of up to one Megabyte of directly addressable memory. And, with a future exchange for a 16 bit CPU, (Central Processing Unit) you'll have not only a faster machine, but one capable of addressing up to 4 megabytes of memory! There's a lot of room for growth in this system.

Other growth features of the Basicare system will include a disk drive controller, a high speed tape controller, high resolution color graphics, and a serial data link (for telecomputing). These items aren't yet available, but will be directly compatible with the modules currently available.

The major difference in the way the Basicare system works is in its method of handling memory. It lays everything out in 64K "pages" and then allows your programs and data to interact with programs and data on different pages. Much the same way a program might "READ" data from a disk, it can do the same from a memory page of the Basicare system.

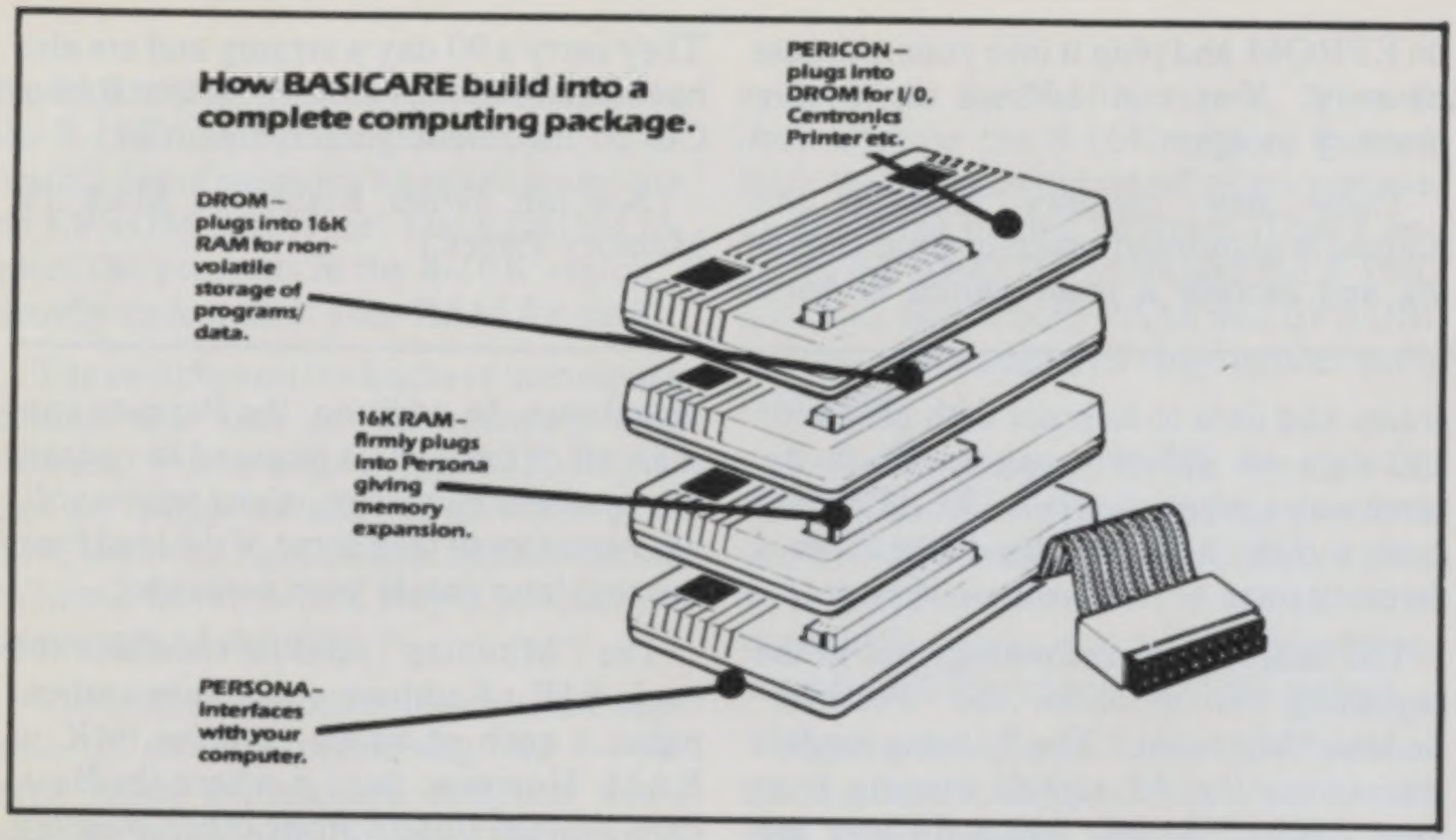
The heart of this technology lies in the beginning two modules, the "Persona" and the "Minimap." The Persona module transforms the 43 signals coming from your ZX81/TS1000 into a 64 way bus that is configured to fit into your computer's address map. This is what expands the number of addressing positions to 4 megabytes. In addition, the Persona supplies all of the signals required to operate the dynamic memories, along with a voltage regulator to take some of the load from the regulator inside your computer.

The "Minimap" module redefines the basic 64K of address space into vertical pages... each of which contains 64K of RAM. However, here is where the Basicare system differs from other memory add-ons. These 64K pages aren't laid out the same as a standard 64K RAM module would set them up. For example, you



The Basicare "Organic Micro" System.

(See Order Blank for Prices)



How Basicare modules stack together.

don't automatically have a complete 64K on a page when you add a 64K module. Instead, you get four 16K blocks... arranged in vertical pages. Each page then has another 40K of address space for other Basicare modules.

In figure 1, you can see the layout of a typical "page" of Basicare memory. Note the 8K Sinclair ROM operating system. It's duplicated on every page. This leaves an actual 56K of available memory on each page. "Tool" is the normal 8-16K area of memory reserved for enhanced operating systems if you need them. Because of this, the Basicare "Toolkit" module is designed to reside in this space. It accepts up to four 2K EPROMS, for a total of 8K of permanent memory. Or, you can just plug regular RAM memory into the TOOL region, giving volatile, but accessible RAM memory much as a standard 64K module would supply RAM in this area. In this case you could use the Basicare RAM 08, which takes up to four 2K RAM chips. The Tool segment of memory can then be used for data.

Files A & B can contain 16K of RAM each. However, they do have different functions. File A is used for normal BASIC program use and File B is the display file. Usually, your 16 and 64K add-ons will all reside in File A's. However, if no display is needed for one particular page, File B can also be used for BASIC programs or data. In such a case, the data or calculations from that page would have to be displayed through another page.

The "Data" segment of memory is just extra space for programs or data. File A can spill over into the 8K of "Data," giving a total of 24K of available memory to File A. The "Path" segment is reserved for future applications, and "Slot" is used for control of the peripheral modules... that is, the "Pericon" modules.

All of this may seem confusing the first time you read through it. But the reasoning behind it all is ingenious. You see, with things organized this way, a program in File A of one page can interact with "Tool" and "Data" segments from another page. In more clear terms, a data file program that normally can only use 16K, can now be made to use data files from many different 16K pages. An electronic spreadsheet program can produce different sheets on different pages and then have a master sheet on yet another page which would total the figures of all of the single spreadsheets.

A logical question here might be: how does each module know which page and memory segment it resides in? Well, on the backs of the Basicare modules are pin wafer connectors. The use of patch cords and shunt plugs tells each module where it is. Accessing these areas of memory is just as simple. To access page one, you POKE 45440,0. Page two is POKE 45440,16... and so on in units of 16. These POKE commands can be embedded within programs if you like. That way programs and data from different pages can be automatically accessed whenever they're needed.

With the present 8 bit CPU in your computer, the Basicare system allows up to 16 different programs to simultaneously share up to 16 "Data" and "Tool" memory segments. This is known as multitasking and is normally only available on very expensive computer systems. A typical business configuration might include a data bank, inventory file, general ledger, accounts receivable, accounts payable, and word processing... all in the same computer and interacting with each other at the same time.

Software compatibility with the Basicare system is pretty good. Although it *can* separate programs from data so that data can be stored separately, (as in disk system) it doesn't have to. If you have a 16 K program like the *Organizer* data file, which saves program and data all together, you can just load the program into several pages of memory. It's not quite as efficient as having the program on one page and data on several. But it works better than having to reload data and program from tape into a standard RAM. With Basicare, you can load your entire data base into the computer in the morning and have instant access throughout the day.

Reliability, in the Basicare System, carries as much weight as utility and good looks. The ribbon cable attaching the persona module to your computer uses a high quality edge card connector that fits so tight, you'll never have to worry about memory crashes from a jiggled work sta-

tion. The modules themselves connect to each other by way of 64 pin plugs and receptacles. The contact is so firm, you can pick up an entire configuration while only holding onto the top module.

You've already read about the Persona, Minimap, RAM 08, and Toolkit modules. There also are the RAM 16, RAM 64, DROM, Pericon-a, Pericon-b, Pericon-c, and Sonus modules. As well as the User Font option.

RAM 16 and RAM 64 supply you with one or four 16K blocks of memory which reside in File A of various memory pages. Because of this configuration, RAM 64 is the only 64K add-on in the world to supply a true 64K. Others give 56K plus the Sinclair 8K ROM.

"DROM" stands for Development Read Only Memory. With its own rechargeable power cell, the DROM module retains its memory when the power is off, yet behaves as normal Read/Write RAM when the computer is in use. Each DROM module can have up to 8K of memory expanded with plug-on 2K chips. DROM can be located in either the TOOL or Data segments of a page, can be protected from overwriting, and is most useful for developing your own enhanced operating system utilities.

The Pericon modules are for controlling a wide assortment of peripheral devices. Pericon "a" is a general purpose interfacing module. It provides 24 lines of I/O, (Input-Output) each of which is fully programmable. Three operating modes provide basic I/0, strobed I/0, and bidirectional 8 bit data transfer with handshakes. On board address decoding allows the simultaneous use of up to four pericon "a" modules, giving a total of 96 I/0 lines.

Pericon "b" is a general purpose control module. Each of its 24 lines of output are capable of handling 40mA from a 30 volt source. This is sufficiently powerful to operate relays or small solenoids directly, as well as driving signal lines over long distances. You can use up to 4 Pericon "b" modules at any one time... giving a total of 96 control lines.

Pericon "c" is a Centronics parallel interface. Its primary intention is to allow connection of your system to a full size printer. Incidentally, we've tested the Timex 2040 Printer with the Basicare system and it's not compatible. However, our Seikosha printer *is* compatible. Just remember to purchase the Pericon "c" module rather than the Memotech Centronics Parallel interface (which is normally part of our Seikosha Package).

What would you *use* these Pericon modules for? Pericon "a" will connect to the serial data link (RS232 Port) for Telecomputing. Or, it can be used for other various I/0 applications such as piano keyboards, joysticks, scientific data measurement and control farm field irrigation systems, etc. Pericon "b" can give programmed control of several machines all at one time. You might use it to run your electric train set, operate an electronic show window display, or even automate a small manufacturing firm. And, whatever you use your computer for, you can get high quality printed reports from a Pericon "c" module and a Seikosha printer.

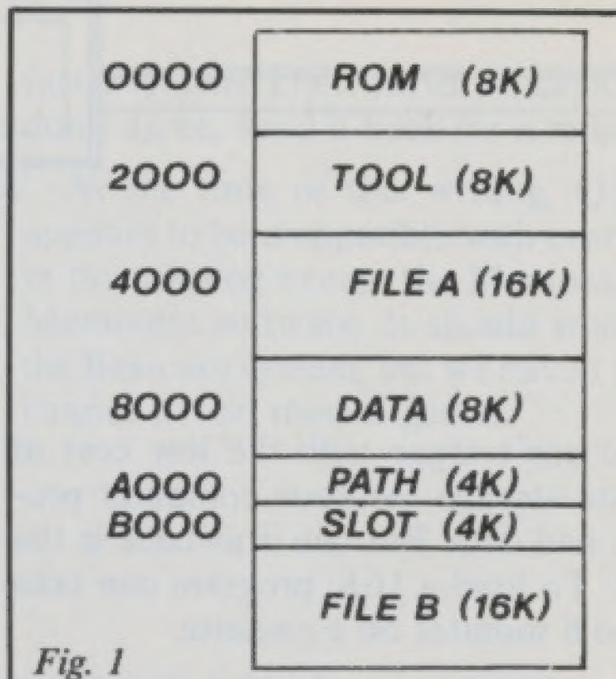


Fig. 1

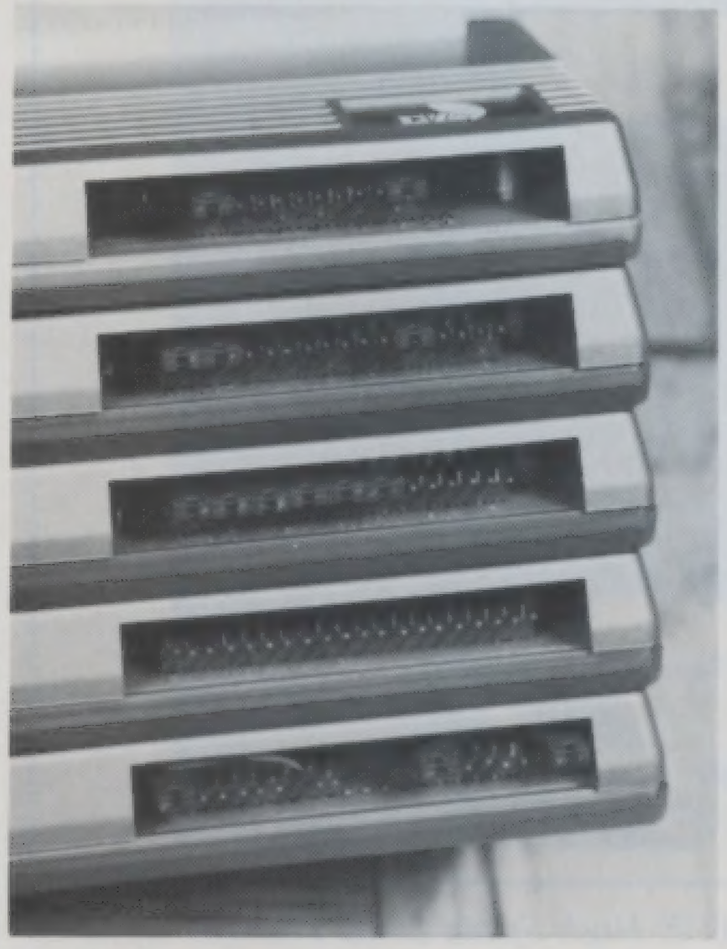
This figure shows the memory segments of each page.

The Sonus module is a three voice synthesizer with independent envelope control under BASIC commands. An integral loudspeaker and even stereo are available. And with the Basicare memory addressing, you can have a total of 24 voices!

The Userfont option replaces the basic 64 Sinclair characters and their video inverse with a set of 128 characters. You can define them yourself. Some examples might be lower case letters, special game graphics, etc. These characters can be selected from within a program or used in conjunction with the regular characters under control of an external signal. You use the Userfont in connection with DROM, RAM 08, or the Toolkit modules. It's a 2K plug-on chip.

Photos have shown the Basicare system connected to an English ZX Spectrum, so we expect it *will* be compatible with the new Timex-Sinclair 2000 computers. In its present modules, this is a terrific advancement for Timex-Sinclair computing. But with the new tape and floppy disk drives, it will be unbeatable. And, that's why you see it in our catalog. As with all E. Arthur Brown Co. products, it carries our 10-day, money back, free trial.

(See our Order Blank for Basicare Prices.)


Shunt plugs and pin wafer connectors.

(See Order Blank for Prices)

Mass Storage

High Speed Data Storage

You can't argue with the low cost of cassette storage for your computer programs and data. But one drawback is the speed. To load a 16K program can take around 8 minutes on a cassette.

Some disc drives and a high speed tape loop have been developed to solve the speed problem. But, they've only opened up new problems themselves. For example, data and programs must be stored separately in different "files" with these systems. At present, nearly all software products available keep programs and data together... as one unit designed to save to cassette. Use with discs and high speed tape loops still requires internal modification of programs. And, unless you understand machine code, the modifications can be very difficult.

Software incompatibility is only one area where disks and high speed loops fail the TS1000/ZX81. They also have problems with their interfaces co-habitating the same areas of computer memory as printers, EPROMS, and other plug compatible peripherals. To add insult to injury, these systems are also very expensive. Prices range from $200-$450... for something you'll have a real battle making use of.

Q-SAVE

A more suitable high speed system is available, that uses your cassette player. It's called "Q SAVE," and it consists of an amplifier/filter and about 300 bytes of machine code programming. When used in conjunction with your cassette player, Q-SAVE makes 16K programs and data load in about 30 seconds. That's 16 times faster than cassette. Considering access time and media certification, that compares quite favorably to Disks and tape loops.

But the best part about it is the compatibility. It works with your programs without having to alter them. The only requirement is that you be able to BREAK into a program to get the cursor. You need the cursor to give the QSAVE commands. Otherwise, QSAVE is compatible with all programs. Its 300 bytes of software load to RAM TOP, so it won't interfere with interfaces and other expansions in the 8-16K area of RAM. The amplifier/filter serves to give more reliable LOADs and to "Verify" SAVEs. The result is high

QSAVE High Speed Data Transfer System.

speed, verification, and reliability... the same things disks and tape loops provide. But QSAVE can do it without all of the incompatabilities.

The QSAVE commands can be embedded within a program if you like. The software comes already set for either 16K or 64K RAMs. A nine volt transistor radio battery is required (available from us), but otherwise the thing works great right out of the box. The best part is that it costs so little. Way less than Disks and tape loops. Check our order blank for the exact price.

Of course, Disks and tape loops will someday be completely compatible with your TS1000/ZX81. But until then, QSAVE is the best way to go if you want a faster system. Try it out for 10 days. If you don't agree, send it back for a refund.

At the time of this writing, QSAVE appears to be compatible with everything in this catalog except the Memocalc and Memotext software. It should work with the Basicare system, but we haven't had a chance to test them together.

(See Order Blank for Prices)

Keyboard Upgrades

It probably hasn't taken you very long to become a faster typist than your TS1000/ZX81 membrane keyboard can handle. This usually happens in just a few weeks. You subconsciously learn where all of the keys are and after that you don't have to look at the keyboard to know where a particular key is. That is, you *wouldn't* have to look at the keyboard if you could feel the keys!

A keyboard upgrade is a logical step as you progress in Timex-Sinclair computing. It allows your economy system to grow with you as you become more skilled. A better keyboard cuts down on eyestrain from having to look back and forth from keys to TV screen. It makes for faster programming and data entry. And now, with our new Memotext word processor, you can use a keyboard to create text as fast as you can type! That's right! *As fast as you can type!* The new programming technologies are incorporating new input routines. The results make high speed typing a reality.

The MKI Keybutton Overlay.

We've shopped the world to bring you the most exciting line of keyboard upgrades available. There's something here to fit every need and every pocketbook. All are top quality items, designed for years of service and backed by our 10-day, money back, free trial.

The Mark I Keybutton Overlay

Our most economical keyboard upgrade, the Mark I, provides full stroke, calculator type keybuttons at a low price. The board itself is positioned directly over your membrane keyboard. There are no wires to solder, plug in, or mess with in any way. You don't have to unscrew and open up your computer case. The Mark I simply mounts with pressure sensitive adhesive strips.

The action of the Mark I is achieved through a set of springy plastic nodules. The keybuttons press the nodules dead center on the membrane keys. When you release the keys, they spring back away from the membrane keyboard.

There are 40 keybuttons all together on the Mark I. The Numeric keys are colored light blue, the Shift and Enter keys are orange, and the rest are white. Legends are molded into the tops of the keys in black.

The Mark II Clickswitch Keyboard

The Mark II is for people who need the touch sensitivity and reliability of a full-size typewriter keyboard, but wish to retain the small size of their Timex-Sinclair computer systems. It offers quality features such as concaved keytops... so your fingers won't slip off the keys; a reliable "Click" confirmation of key entry; and the long life advantages of solid state technology.

The legends on the Mark II Keyboard are printed in red and black on a white background. The keys themselves are black and are mounted on a matte black circuit board. Once installed, the whole thing looks like it came as standard equipment with your computer!

The MKII Clickswitch Keyboard.

The Memotech Keyboard.

Installation does require opening your computer case. However, it's not a difficult procedure. You unplug the membrane keyboard and peel it off the computer. Then you attach the Mark II with pressure sensitive adhesive strips, plug it in, and screw your computer case back together again.

The Mark II has 41 keys altogether... the standard 40 Timex-Sinclair keys plus one accessory key. Electronics buffs may wish to configure this key for computer reset, an extra shift key, or maybe even a repeat key function. Or, you can just leave it alone. The rest of the keys work fine without it.

The Memotech Keyboard

Long known for their high quality Memopak RAM memories, Memotech has now entered the keyboard marketplace. The Memotech keyboard is the only keyboard upgrade that plugs onto the edge card connector at the back of your computer. This makes for quick and easy installation, of

(See Order Blank for Prices)

course. But it also means you can conveniently disconnect the keyboard when situations require the small size and portability of the regular membrane keyboard.

The heart of the Memotech unit is in the plug-on interface module. Although the literature calls it a "Buffer," it's really not that. It actually functions as a keyboard interface. It provides the means for plugging the keyboard onto the back of your computer. As you can see from the photos, the module has the same attractive appearance as other Memotech modules and has a through plug so that other accessories can be attached to its back.

There are actually two versions of the keyboard available. One is anodized blue aluminum with blue plastic keys and white legends. The other is anodized black with white plastic keys and black legends. We have no control over which version is shipped to us. However, lately we've been getting all black ones and no blue ones.

The MKIV Keyboard with MKIV Numeric Pad attached. (Note: Prototype Keypad shown. Production models have 19 keys.)

The MKIV Keyboard.

The Memotech Keyboard has 41 keys: the usual 40 Timex-Sinclair keys plus an extra shift key located conveniently near the Delete, Graphics, and Quotes keys.

Mark IV Business Keyboard

The real test of a quality keyboard is in the "Feel" of the keys. If high precision keyswitches are used, the result is a solid, but sensitive feel... very little wobble. If you'd like to feel the action of the Mark IV before you buy, try out a Hewlett-Packard or a DEC computer keyboard. See how easily they respond to your touch... how the keytops are always right where you expect them to be with never a wobble. The sensation is exactly the same as our Mark IV Business keyboard... and for good reason. These are *exactly the same* keyswitches as are used in those much hgher priced computers!

If the action of the keyswitches isn't enough to impress you, the keytops are sure to do it. Rather than the less expensive pro-

cess of molding in the legends or coloring them with paint, these keytops are produced with the latest, state-of-the-art "Sublimation" processes. Simply explained, sublimation produces colored legends right in the plastic itself. The result is a smooth faced keytop with legends that are virtually impossible to wear out! The Mark IV features light gray keys with black and red *sublimated* legends.

There are 41 keys in the Mark IV. They include the standard 40 Timex-Sinclair keys and a full length space bar. That's right... a space bar. We received so many requests for this feature in a keyboard, we couldn't think of producing anything without it! Even so, you still aren't limited to just 41 keys on the Mark IV. There's a jack on the side that's cable ready for our Mark IV Numeric keypad! Combine this feature with our top quality business software and you're looking at an outstanding computer system.

The Mark IV is simple to install. You unscrew and open your computer case, unplug your membrane keyboard, plug in the Mark IV, and screw the case back together again. The ribbon cable fits thru the slot on the front of your computer.

The Mark IV Business Keyboard is our finest keyboard offering. They were produced to our specifications by one of America's most experienced keyboard manufacturers. If you're looking for top quality, this is the keyboard for you.

The MKIV Numeric Pad. (Note: This is the prototype. Production models have 19 keys.)

Mark IV Numeric Keypad

Designed to plug into our Mark IV Business Keyboard, the Mark IV Numeric Keypad provides a 19 Key calculator-type arrangement of the numeric and mathematic key functions. Please note that the photograph shows only a 12 key prototype. Our actual production models feature 19 keys. They consist of all the numbers, of course, the four mathematic functions, the period, the "PRINT," the "=," the "ENTER," and the "SHIFT" keys. Use of the shift converts the 5,6,7 and 8 keys to their arrow functions. Combine this feature with the numeric pad extension cable and you've got a better way to play computer games. Or, a mechanism similar to the "mouse" feature on the new Apple® Lisa computer!

Used without the 6 foot extender cable, the Mark IV Numeric Keypad fits nicely right beside the Mark IV Business Keyboard. Both of their housings have the same profile. Configured this way, you can use the keypad for high speed entry of numeric data. Some applications would include bookkeeping, spreadsheet, or other mathematical types of computing. The calculator feature of our integrated "Mega Desk" program would make fine use of the keypad.

You can order the Mark IV Numeric Keypad with the Mark IV Keyboard, or wait and order it separately. Either way, they're completely compatible.

(See Order Blank for Prices)

Printers

There are two major requirements we set before including a printer in our line. First, it must operate from the standard Timex-Sinclair BASIC print commands: LPRINT, LLIST, and COPY. If a printer doesn't operate in this manner, you'll have trouble getting a printout from commerical software. Our second requirement is to give the best value for your money. The three printers you see here do just that. All of them do as much or more than comparable printers, at significant savings.

The Mindware MW100 Printer

The MW100 is the first plain paper printer designed especially for the Timex-Sinclair computer. It uses standard adding machine paper and ribbons and gives a sharp, dot matrix printout. The actual printout is 16 characters wide, but can be configured in 3 convenient print modes. Mode 1 prints just one half of your screen... convenient for mailing labels or other such computer printing. Mode 2 prints first one side and then the other side of your screen. Tape the two halves together and you get a full 32 character printout. Mode 3 simply reorganizes a 32 character screen width to fit 16 character lines.

The Mindware MW100 requires no special interface and uses the standard print commands. For extra paper and ribbons, see our price list under "MW100."

The Timex-Sinclair 2040 Printer

At last, an affordable printer with a high quality, 32 character wide, white paper printout. And, it's dot matrix at that!

The new Timex 2040 printer was designed especially for the Timex Sinclair line of computers. It uses the standard print commands and requires no interface. You just plug it onto the back of your computer. A through-plug allows the Timex RAM to be attached at the same time.

This new printer uses white, thermal paper that looks and feels very much like plain white stationary. There's no metalized surface to smear or scratch. You get quality printouts that are easily photocopied... or even cut for mailing labels.

A high resolution dot matrix print mechanism is standard. It looks just like the printouts on full size dot matrix impact printers. Graphics are a whiz on the 2040. You can even use it for writing letters... with the aid of a good Word processor program.

The Timex-Sinclair 2040 printer comes with one roll of paper and its own power pack. For replacement paper, see our order blank under "2040 Printer."

Thermal paper for TS2040 Printer.

The Timex-Sinclair 2040 Thermal Printer.

The Seikosha Printer Package, shown complete with Centronics Parallel Interface and cable.

The Full-Size Seikosha Printer

Here is a quality, tractor feed, dot matrix impact printer that prints a full 80 character width from your Timex-Sinclair computer! And get this: It even prints *lower case letters!*

If you've always felt the Timex-Sinclair computer was capable of bigger and better things, this is the printer that proves it. Any standard tractor feed computer forms available, from mailing labels to invoices, envelopes and stationary can be printed with the Seikosha. The impact mechanism gives enough force to print the original plus two copies, and the tractor feed is adjustable up to a 10-inch width.

Characters are formed in standard 5 x 7 dot matrix format. And, by simply typing in the graphic or inverted mode, your characters will be printed in lower case! There are four printing modes: Standard mode is for general printing of letters, mailing labels, invoices, etc.; Double Width mode is for titles, headings, etc.; Multiple Pass mode is for boldness and darkness... when your words need emphasis; and Graphics mode is for anything from charts and graphs to computer art!

The Seikosha prints at a rate of 30 characters per second... about 5 times faster than a 60-word per minute typist. In the package we supply, it operates from standard Sinclair Basic commands. So, it will work fine with all Timex-Sinclair compatible software.

You can purchase the Seikosha printer alone or as a package. The package includes a Memotech Centronics Parallel Interface and cable. Just plug it in, add paper, and print!

Memosha: Graphics software for the Seikosha

Because of its ability to interpret inverse letters as lower case letters when printing, the Seikosha Package does not possess the ability to print the Timex-Sinclair graphics symbols. It *will* plot points or pixels, and is especially good at it with the addition of the High Resolution Graphics module. But the actual graphics *symbols* won't work.

There is a way around this, however. A new program called "Memosha" loads to the top addresses of your RAM and can then be attached to other programs. Its main purpose is to provide the graphic symbols where they need to be printed. But, it also provides high speed paper feed and will skip spaces so as not to print on the perforated portions of your paper. We highly recommend Memosha if you plan to do any graphics work with the Seikosha Printer Package.

ZTEXT Seikosha Modification Brochure

ZTEXT was an economical word processor we used to sell that was designed primarily for the TS2040 printer. If you own a ZTEXT program, you can modify it to work on the Seikosha full size printer package with these instructions. Full upper and lower case letters are supported and you can even use double size letters!

Seikosha Supplies

We carry standard white (8 1/2 x 11) fan fold paper for the Seikosha printer as well as pressure sensitive mailing labels. Both have removable tractor feed holes on their margins for convenient paper feed. We also carry replacement ribbons. Check our price sheet under the Seikosha GP-100A listing.

(See Order Blank for Prices)

Telecomputing

You can use your TS1000/ZX81 to access some of the world's largest data banks! All you need is a modem and a telephone. Hook them up with your computer, dial the phone number of another computer, and you're in business!

It's called "telecomputing" and it's the wave of the future. With it, office workers needn't leave their homes to handle correspondence, transact business, or make travel plans. Rather than send letters through the mail, you can do it electronically. Beep them via the telephone to the addressee's terminal. You can order merchandise, transfer payment monies, and confirm delivery in minutes using firms that accept orders in this manner! Travel arrangements have been made by computer for some time now. It just makes sense that you could do it yourself with a computer and modem telephone hook up.

Yes, telecomputing is opening up a whole new future for us. But you don't have to wait for the future to experience it. You can get into it right now with our MD-1 modem and Compuserve services!

MKIV Modem

Our new MKIV Modem is an exciting advancement for TS1000/ZX81 computing. Housed in an elegant low profile module, it simply plugs right onto the back of your computer. To use it, you merely plug it's cord into the jack of your extension phone, dial the number of your nearest computer friend, hang up the receiver, and your're in business.

The reason the MKIV is so simple to use is because of it's software. It has what's known as "Smart Programming." That means it does most of the work for you. For example, It automatically initiates and receives data without your having to issue any commands. You can use it to access programs and data from other computers easily. It receives until your screen fills up, tells the other computer to stop sending, downloads to memory or printer, and then tells the other computer to start sending again! We're very excited about this downloading feature...many of you have requested it.

The MKIV Modem is equipped with a through plug out the back so that you can add other peripherals (like a MKIV Memory) and is fully compatible with the TS2040 Printer. It also has Internal circuitry to connect an RS232 port and full size Printer if you wish. Use the MKIV Modem to send electronic mail with our new Mega Desk or Mega Mail software!

The MKIV Modem.

CompuServe

If you like the idea of telecomputing, but don't know any computers to call up, the Compuserve program may be what you need. Just one phone number brings you a databank of information and services on just about any subject you want. With Compuserve, you can access the stock market news, telephone directories, medical references, newspapers, magazines, air travel information, the Associated Press wire service, weather info, games, electronic mail, and a myriad of other data banks. When you figure what it would cost to subscribe to the paper version of these sources, the subscription to Compuserve is a bargain. Actually, the list of available services from Compuserve extends through 8 columns of type... finer than a phone directory's, and each are 10 inches long. That's much more than we could list in this catalog!

When you subscribe to Compuserve, you get a phone number and access code. From that point on, you can use your TS1000/ZX81 and MD-1 modem from any telephone in the world!

E. Arthur Brown Company

1702 Oak Knoll Drive, Alexandria, MN 56308 ● 612/762-8847, 612/762-1631

ORDER BLANK

EB2

Date ____________

Your Account Number (Right of Name on Mailing Label)

Day Phone: (____) ____________

Night Phone: (____) ____________

This Number Helps Us Fill Your Order Faster!

MAILING ADDRESS	SHIPPING ADDRESS (If Different)
NAME	NAME
ADDRESS	ADDRESS
CITY	CITY
STATE ZIP	STATE ZIP

Item Number	Description	Shipping Weight	Qty	Unit Cost	Total
		Total Wt.		Item Total	
				6% Sales Tax (MN Res. Only)	
				Shipping & Handling (From Chart)	
				Discounts, Credits	
				TOTAL	

Payment Method (U.S. Funds Only)

☐ Check ☐ Money Order

☐ Visa ☐ Mastercard

Acct. Number ____________

Exp. Date ____________

Signature ____________

Shipping, Handling, & Insurance Chart

U.S. ORDERS

Order Total	Surface	Air
Under $25.00	$1.95	$ 4.50
$25.01-$50.00	$3.95	$ 6.50
$50.01-$100.00	$4.95	$ 8.50
$100.01-$150.00	$5.95	$10.50
Over $150.00	$6.95	$16.50

FOREIGN ORDERS

Service Fee $2.50

Plus the following charges:

Surface..........$4.00 + $1.00 per lb. over 2 lbs. *

Air Parcel.......$7.00 + $1.50 per lb. over 2 lbs. *

*Use the shipping weights from price list for figuring.

Additional charges will be billed for collection upon delivery.

Shipping charges for *Software* to Canada are $2.00 per item.

PRICE LIST EB2

Item Number	Description	Shipping Wt. (Lbs.)	Price
Computers			
100-110	TS1000 Computer	3	$ 49.95
100-115	TS1500 Computer	3	79.95
100-120	TS2048 Computer (Avail. Nov.)	3	149.95
100-124	TS2068 Computer (Avail. Nov.)	3	199.95
Great Memories			
101-216	Memopak 16K RAM	1	$ 48.95
101-232	Memopak 32K RAM	1	99.95
101-264	Memopak 64K RAM	1	148.95
102-216	MKIV Memory 16K	1	74.95
102-264	MKIV Memory 64K	1	158.95
103-200	Basicare Persona	1	58.95
103-205	Basicare Minimap	1	58.95
103-208	Basicare RAM 08	1	48.95
103-210	Basicare Drom	1	73.95
103-215	Basicare Drom & Userfont	1	82.95
103-216	Basicare RAM 16	1	48.75
103-220	Basicare Toolkit	1	43.95
103-225	Basicare 2K For RAM	1	9.95
103-230	Basicare 2K For Drom	1	13.95
103-264	Basicare RAM 64	1	148.95
Mass Storage			
105-300	QSAVE	1	$ 38.95
Keyboards			
101-325	Memotech Keyboard	3	$ 98.95
106-325	MKI Keybutton Overlay	1	24.95
107-325	MKII Clickswitch Overlay	1	78.95
109-325	MKIV Keyboard	3	89.95
109-330	MKIV Keypad	2	49.95
Printers			
100-350	TS 2040 Printer	5	$ 98.95
101-350	Seikosha GP-100A Printer	15	299.95
101-925	Seikosha Printer Package	12	339.95
110-350	MW100 Printer	16	104.95
Telecomputing			
102-375	MKIV Modem	3	$189.95
116-375	Compuserve	1	39.95
Accessories			
100-400	9 V Battery	1	$ 2.95
101-400	Centronics Interface	1	73.95
101-401	Centronics Cable	1	19.95
101-405	RS232 Interface	1	98.95
101-406	RS 232 Cable	1	19.95
101-410	High Resolutions Graphics	1	98.95
103-400	Basicare Pericon "A"	1	53.95
103-405	Basicare Pericon "B"	1	58.95
103-410	Basicare Perion "C"	1	73.95
103-415	Basicare Sonus	1	43.95
103-420	Basicare Userfont	1	13.95
105-400	Ribbon Cable	1	19.95
109-335	MKIV Keypad Extension Cable	1	19.95
110-351	MW100 Ribbon Cartridge	1	14.95
111-400	MW100 Paper (3 rolls)	2	4.95
111-405	Thermal Paper For 2040 Printer (3)	2	5.95
112-400	Seikosha Ribbon	1	14.95
113-400	8 1/2x11 Fan Fold Paper (Wht)	28	39.95
114-400	VOX Speech Software	1	19.95
115-405	Shielded T.V. Cable	2	14.95
117-400	Video Inverter (VHF)	1	16.95
117-401	Video Inverter (UHF)	1	16.95
118-400	Parrot Speech Synth	2	94.95
118-405	Parrot Power Pak	2	29.95
137-400	UHF Conversion Kit	1	19.95
Literature			
115-505	TS Microdrive Tech. Brochure (ppd.)		3.00
115-510	ZTEXT-Seikosha Mod. Inst. (ppd.)		3.00
115-515	TS2000 Tech. Brochure (ppd.)		3.00
119-500	ZX81 Basic Book	1	12.95
120-500	Mastering Machine Code	1	12.95
121-500	Graphics A-Z	1	19.95
127-500	Timex Sinclair Directory (ppd.)		5.95

Item Number	Description	Shipping Wt. (Lbs.)	Price
Software			
Business & Personal			
100-600	The Organizer (16K)	1	$ 16.95
100-610	Stamp Collector (16K)	1	16.95
100-620	Checkbook Manager (16K)	1	15.95
100-625	I R A Planner (16K)	1	15.95
100-630	Real Estate Analysis (16K)	1	14.95
100-635	Stock Option Analyzer (16K)	1	16.95
100-640	Portfolio Analysis (16K)	1	14.95
100-645	Stock Market Tech Anal. (16K)	1	17.95
101-600	Memocalc	1	48.95
101-610	Memotext	1	48.95
100-650	Inventory Control (16K)	1	19.95
100-655	Critical Path Anal. (16K)	1	19.95
114-900	Memosha Software	1	19.95
115-600	Schedi-Mort	1	19.95
122-600	Mego Desk (16-64K)	1	24.95
122-605	Mega-Calc (16-64K)	1	24.95
122-610	Mega-File (16-64K)	1	24.95
122-615	Mega Lex (16-64K)	1	24.95
122-620	Mega Plot (16-64K)	1	19.95
122-625	Mega Stat (16-64K)	1	15.95
122-630	Mega Bill (16-64K)	1	24.95
122-635	Mega Earn (16-64K)	1	24.95
122-640	Mega Pay (16-64K)	1	24.95
122-645	Mega Net (16-64K)	1	24.95
122-650	Mega Stock (16-64K)	1	24.95
122-655	Mega Probe (16-64K)	1	21.95
122-660	Mega Plan (16-64K)	1	24.95
122-665	Mega Mail (16-64K)	1	19.95
123-616	EZ-Bookkeeper (16K)	1	19.95
123-664	EZ-Bookkeeper (64K)	1	24.95
124-600	Sales File (16K)	1	19.95
124-605	Sales File (64K)	1	24.95
124-610	Cash Register (16K)	1	14.95
135-600	Execu-Soft	2	99.95
Games			
100-710	Frogger (16K)	1	$ 17.95
105-700	Krazy Kong (16K)	1	12.95
136-700	Keystroke Mgmt. (2K)	1	14.95
136-705	Working Mothers (2K)	1	14.95
136-710	Making Treks (2K)	1	14.95
136-715	Games Sampler	1	14.95
136-720	Mind Bogglers (2K)	1	14.95
136-725	Mind vs. Machine (2K)	1	14.95
121-700	Zak-Man (16K)	1	19.95
121-705	City of Xon (16K)	1	21.95
125-15	Shark's Treasure (16K)	1	19.95
125-700	Mothership (16K)	1	19.95
125-705	Quest For The Holy Grail (16K)	1	19.95
125-710	Space Commando (16K)	1	19.95
125-720	Superchess (16K)	1	21.95
Education			
100-815	Punctuation (16K)	1	$ 10.95
100-820	German Lessons (16K)	1	10.95
100-825	French Lessons (16K)	1	10.95
100-830	Spanish Lessons (16K)	1	10.95
100-835	Flight Simulator (16K)	1	19.95
100-840	Astronomer's Guide (16K)	1	14.95
100-845	Super Doodles (16K)	1	9.95
100-870	Super Math (16K)	1	14.95
124-800	Math Quiz (16K)	1	19.95
124-805	Flash Spelling (16K)	1	19.95
126-800	Teacher's Gradebook (16K)	1	19.95
136-800	1,2,3 Go (2K)	1	14.95
136-805	Truth Tables (2K)	1	14.95
136-810	Gridlock (2K)	1	14.95
136-815	Snake Eyes (2K)	1	14.95
136-820	Basic BASIC (2K)	1	17.95
Programming Aids			
101-900	Z80 Assembler	1	$ 48.95
105-900	M-Coder (16K)	1	18.95
125-900	Programmer's Tool Kit (16K)	1	19.95
125-905	Graphics Kit (16K)	1	19.95

E. Arthur Brown Company

1702 Oak Knoll Drive, Alexandria, MN 56308 ● 612/762-8847, 612/762-1631

ORDER BLANK

EB2

Your Account Number
(Right of Name on Mailing Label)

This Number Helps Us Fill Your Order Faster!

Date: _____

Day Phone: (_____)_____

Night Phone: (_____)_____

MAILING ADDRESS	SHIPPING ADDRESS (If Different)
NAME:	NAME:
ADDRESS:	ADDRESS:
CITY:	CITY:
STATE: ZIP:	STATE: ZIP:

Item Number	Description	Shipping Weight	Qty.	Unit Cost	Total

Payment Method (U.S. Funds Only)

☐ Check ☐ Money Order

☐ Visa ☐ Mastercard

Total Wt. _____

Item Total	
6% Sales Tax (MN Res. Only)	
Shipping & Handling (From Chart)	
Discounts, Credits	
TOTAL	

Acct. Number: _____

Exp. Date: _____

Signature: _____

Shipping, Handling, & Insurance Chart

U.S. ORDERS

Order Total	Surface	Air
Under $25.00	$1.95	$ 4.50
$25.01-$50.00	$3.95	$ 6.50
$50.01-$100.00	$4.95	$ 8.50
$100.01-$150.00	$5.95	$10.50
Over $150.00	$6.95	$16.50

FOREIGN ORDERS

Service Fee..... $2.50
Plus the following charges:
Surface.....$4.00 + $1.00 per lb. over 2 lbs. *
Air Parcel.....$7.00 + $1.50 per lb. over 2 lbs. *
*Use the shipping weights from price list for figuring.
Additional charges will be billed for collection upon delivery.
Shipping charges for *Software* to Canada are $2.00 per item.

PRICE LIST EB2

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101-232	Memopak 32K RAM	1	99.95
101-264	Memopak 64K RAM	1	148.95
102-216	MKIV Memory 16K	1	74.95
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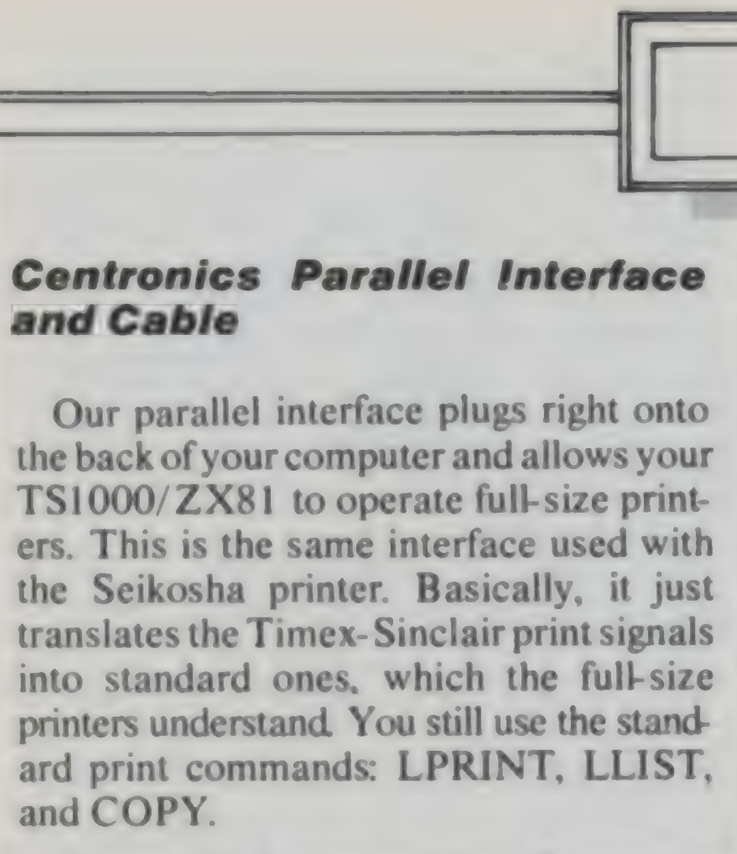
103-205	Basicare Minimap	1	58.95
103-208	Basicare RAM 08	1	48.95
103-210	Basicare Drom	1	73.95
103-215	Basicare Drom & Userfont	1	82.95
103-216	Basicare RAM 16	1	48.75
103-220	Basicare Toolkit	1	43.95
103-225	Basicare 2K For RAM	1	9.95
103-230	Basicare 2K For Drom	1	13.95
103-264	Basicare RAM 64	1	148.95
Mass Storage			
105-300	QSAVE	1	$ 38.95
Keyboards			
101-325	Memotech Keyboard	3	$ 98.95
106-325	MKI Keybutton Overlay	1	24.95
107-325	MKII Clickswitch Overlay	1	78.95
109-325	MKIV Keyboard	3	89.95
109-330	MKIV Keypad	2	49.95
Printers			
100-350	TS 2040 Printer	5	$ 98.95
101-350	Seikosha GP-100A Printer	15	299.95
101-925	Seikosha Printer Package	12	339.95
110-350	MW100 Printer	16	104.95
Telecomputing			
102-375	MKIV Modem	3	$189.95
116-375	Compuserve	1	39.95
Accessories			
100-400	9 V Battery	1	$ 2.95
101-400	Centronics Interface	1	73.95
101-401	Centronics Cable	1	19.95
101-405	RS232 Interface	1	98.95
101-406	RS 232 Cable	1	19.95
101-410	High Resolutions Graphics	1	98.95
103-400	Basicare Pericon "A"	1	53.95
103-405	Basicare Pericon "B"	1	58.95
103-410	Basicare Perion "C"	1	73.95
103-415	Basicare Sonus	1	43.95
103-420	Basicare Userfont	1	13.95
105-400	Ribbon Cable	1	19.95
109-335	MKIV Keypad Extension Cable	1	19.95
110-351	MW100 Ribbon Cartridge	1	14.95
111-400	MW100 Paper (3 rolls)	2	4.95
111-405	Thermal Paper For 2040 Printer (3)	2	5.95
112-400	Seikosha Ribbon	1	14.95
113-400	8 1/2x11 Fan Fold Paper (Wht)	28	39.95
114-400	VOX Speech Software	1	19.95
115-405	Shielded T.V. Cable	2	14.95
117-400	Video Inverter (VHF)	1	16.95
117-401	Video Inverter (UHF)	1	16.95
118-400	Parrot Speech Synth	2	94.95
118-405	Parrot Power Pak	2	29.95
137-400	UHF Conversion Kit	1	19.95
Literature			
115-505	TS Microdrive Tech. Brochure (ppd.)		3.00
115-510	ZTEXT-Seikosha Mod. Inst. (ppd.)		3.00
115-515	TS2000 Tech. Brochure (ppd.)		3.00
119-500	ZX81 Basic Book	1	12.95
120-500	Mastering Machine Code	1	12.95
121-500	Graphics A-Z	1	19.95
127-500	Timex Sinclair Directory (ppd.)		5.95

Item Number	Description	Shipping Wt. (Lbs.)	Price
Software			
Business & Personal			
100-600	The Organizer (16K)	1	$ 16.95
100-610	Stamp Collector (16K)	1	16.95
100-620	Checkbook Manager (16K)	1	15.95
100-625	I R A Planner (16K)	1	15.95
100-630	Real Estate Analysis (16K)	1	14.95
100-635	Stock Option Analyzer (16K)	1	16.95
100-640	Portfolio Analysis (16K)	1	14.95
100-645	Stock Market Tech Anal (16K)	1	17.95
101-600	Memocalc	1	48.95
101-610	Memotext	1	48.95
100-650	Inventory Control (16K)	1	19.95
100-655	Critical Path Anal (16K)	1	19.95
114-900	Memosha Software	1	19.95
115-600	Sched-Mort	1	19.95
122-600	Mego Desk (16-64K)	1	24.95
122-605	Mega-Calc (16-64K)	1	24.95
122-610	Mega-File (16-64K)	1	24.95
122-615	Mega Lex (16-64K)	1	24.95
122-620	Mega Plot (16-64K)	1	19.95
122-625	Mega Stat (16-64K)	1	15.95
122-630	Mega Bill (16-64K)	1	24.95
122-635	Mega Earn (16-64K)	1	24.95
122-640	Mega Pay (16-64K)	1	24.95
122-645	Mega Net (16-64K)	1	24.95
122-650	Mega Stock (16-64K)	1	24.95
122-655	Mega Probe (16-64K)	1	21.95
122-660	Mega Plan (16-64K)	1	24.95
122-665	Mega Mail (16-64K)	1	19.95
123-616	EZ-Bookkeeper (16K)	1	19.95
123-664	EZ-Bookkeeper (64K)	1	24.95
124-600	Sales File (16K)	1	19.95
124-605	Sales File (64K)	1	24.95
124-610	Cash Register (16K)	1	14.95
135-600	Execu-Soft	2	99.95
Games			
100-710	Frogger (16K)	1	$ 17.95
105-700	Krazy Kong (16K)	1	12.95
136-700	Keystroke Mgmt (2K)	1	14.95
136-705	Working Mothers (2K)	1	14.95
136-710	Making Treks (2K)	1	14.95
136-715	Games Sampler	1	14.95
136-720	Mind Bogglers (2K)	1	14.95
136-725	Mind vs. Machine (2K)	1	14.95
121-700	Zak-Man (16K)	1	19.95
121-705	City of Xon (16K)	1	21.95
125-15	Shark's Treasure (16K)	1	19.95
125-700	Mothership (16K)	1	19.95
125-705	Quest For The Holy Grail (16K)	1	19.95
125-710	Space Commando (16K)	1	19.95
125-720	Superchess (16K)	1	21.95
Education			
100-815	Punctuation (16K)	1	$ 10.95
100-820	German Lessons (16K)	1	10.95
100-825	French Lessons (16K)	1	10.95
100-830	Spanish Lessons (16K)	1	10.95
100-835	Flight Simulator (16K)	1	19.95
100-840	Astronomer's Guide (16K)	1	14.95
100-845	Super Doodles (16K)	1	9.95
100-870	Super Math (16K)	1	14.95
124-800	Math Quiz (16K)	1	19.95
124-805	Flash Spelling (16K)	1	19.95
126-800	Teacher's Gradebook (16K)	1	19.95
136-800	1,2,3 Go (2K)	1	14.95
136-805	Truth Tables (2K)	1	14.95
136-810	Gridlock (2K)	1	14.95
136-815	Snake Eyes (2K)	1	14.95
136-820	Basic BASIC (2K)	1	17.95
Programming Aids			
101-900	Z80 Assembler	1	$ 48.95
105-900	M-Coder (16K)	1	18.95
125-900	Programmer's Tool Kit (16K)	1	19.95
125-905	Graphics Kit (16K)	1	19.95

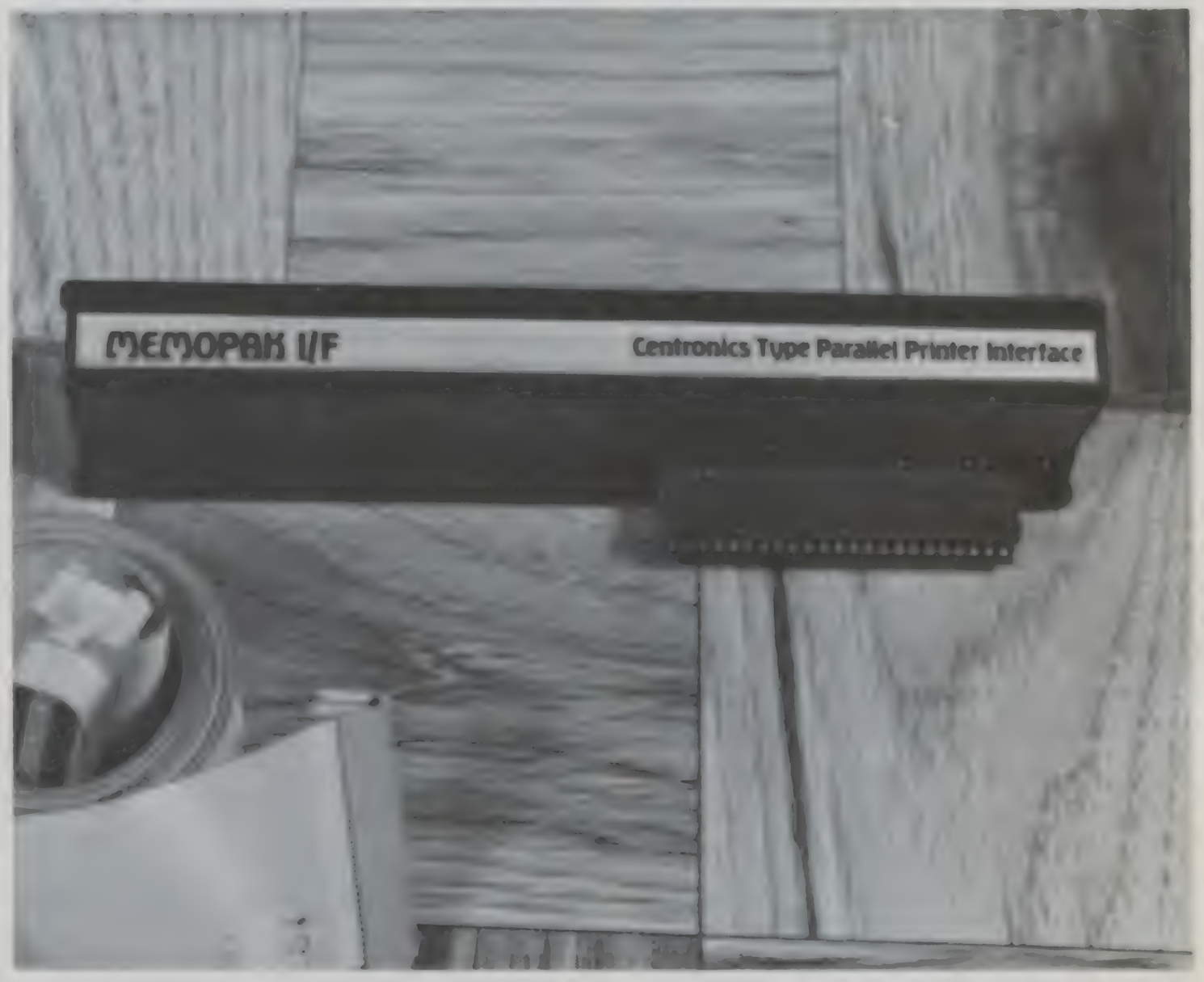
Centronics Parallel Interface and Cable

Our parallel interface plugs right onto the back of your computer and allows your TS1000/ZX81 to operate full-size printers. This is the same interface used with the Seikosha printer. Basically, it just translates the Timex-Sinclair print signals into standard ones, which the full-size printers understand. You still use the standard print commands: LPRINT, LLIST, and COPY.

A special feature of the Centronics Parallel Interface is the ability to print lower case letters. By typing in the graphics mode, inverse characters are produced. These are then translated to lower case letters on your printer. The combination of this feature and the Memotext word processor produces regular high speed text entry with each letter being lower case unless shifted... just like a typewriter.



Peripheral Ribbon Connector.



The Centronics Parallel Interface and Cable.

The Centronics Parallel interface is compatible with all printers accepting Centronics Parallel Input. The cable is designed to fit the interface and a standard Centronics port.

RS232 Interface and Cable

If you have a printer with a RS232 port, this is the interface to use. It works the same way as the Centronics Parallel interface, only it also has the capability of communicating with a modem... for telecomputing. We expect the RS232 Interface to be in stock the first part of July.

It should be noted that both of these printer interfaces will not support the TS1000/ZX81 graphic symbols. This is because of their ability to print lower case letters. However, you can get around this problem if your printer is the Seikosha and you use our new "Memosha" graphic software. It allows the graphic symbols to be printed on the Seikosha printer.

(See Order Blank for Prices)

The Video Inverter

A fun addition to your computer, the Video Inverter, changes your TV picture from black letters on a white background to white letters on black. It makes for less eyestrain and a clearer picture... since, in the inverted mode, the white part that's usually wavy is totally black. For some programs, such as word processing, you may still prefer the black on white screen. This is no problem since the Video Inverter comes with a toggle switch for going from one to the other. You can even adjust the background from totally black to gray... using your television controls.

Installation does require opening the computer case. Four solders must be made and the toggle switch installed. Please note, our Inverters have been custom made with extra long toggle switch leads. This allows you to install the switch anywhere you want on the computer. Other Inverters have short toggle switch leads requiring installation on the back of the computer... right where your RAM pack plugs on. Order our Inverter, and you can be sure of no interference with other peripherals.

The Video Inverter

High Resolution Graphics

Although the TS1000/ZX81 comes equipped with excellent graphics capabilities, some applications may require more detailed plots. Instead of the 64x44 plotting points you normally get, our HRG module provides 248/192 plotting points or pixels. This results in much smoother, rounder looking curves. Also included is a 2K EPROM that's fully programmed with special graphics subroutines. You call them up either through the "USR" function or by machine code commands. This software enables you to work interactively at the dot, line, block and page levels. Scrolling, flashing, and animation are some applications.

The documentation that comes with the HRG does explain the functions adequately. However, some customers have expressed a desire for more examples and in-depth instructions. A good book that covers these areas is *Graphics, A-Z*. It makes special note of the High Resolution Graphics module and how to get the most out of it. See our literature section for a description.

The High Resolution Graphics module works well with all of our printers. However, since it occupies memory in the 8-16K region of RAM, it may not work with your disc or high speed tape loop system. See our order blank for price.

The Parrot Speech Synthesizer

Speech synthesis is a fascinating aspect of computing. Actual breath, throat contractions, vocal chord vibrations, and tongue and lip movements of speech are electronically initiated by your computer! Our Parrot Speech Synthesizer can introduce you to this amazing science and make it part of your computer system. A through plug allows other peripherals to attach to the Parrot.

It works through the use *allophones*. These are the constructional parts of speech and the Parrot has 63 of them altogether. Through your progamming, you assemble words and phrases from these allophones.

Probably the most useful part of the Parrot is its instructional manual. A refreshing change from the usual inadequate documentation, the Parrot manual gives a complete education in speech synthesis, its theory, and application. You come away from it with much more than a basic understanding of the machine.

The Parrot Speech Synthesizer is something you can either use for educational

The Parrot Speech Synthesizer.

purposes, or for several other useful applications. Can you imagine the thrill for computer students to actually program their computers to talk? How about setting it up to answer the phone? The telephone companies are already doing this sort of thing. Or, you might use it to answer the door. The computer could vocally request a password, to be keyed into a keypad, and then use a control circuit to unlock and open the door!

We're very proud to carry the Parrot. Where other speech systems only allow the assembly of words from a standard vocabulary, *it* allows an unlimited vocabulary from the 63 allophones. And, it teaches the theory of speech synthesis at the same time.

Parrot Power Supply

Plugged directly onto your TS1000/ZX81, the Parrot requires no additional power supply. However, if you plan to use any additional RAM module or other plug-on peripheral, you'll need a supplementary power pack. Our Parrot power pack provides all additional power needed to operate peripherals.

Parrot External Speaker

The Parrot does require an external speaker to facilitate the speech it produces. It's an 8 ohm speaker which you can either attach yourself or buy from us. We shopped for and found one that has a nice housing and the right jack. Buy it from us and you needn't worry about wiring and soldering... just plug it in.

Vox Comp Speech Software

Where the Parrot assembles speech from raw allophones, Voxcomp does it from a vocabulary of special allophone codes. This in turn creates a library of synthesized speech which you can draw upon to merge speech with any computer program. Special features include an already resident vocabulary, a data manager, and special program interfacing abilities. Through the use of unique data compression and allophonic chaining techniques, Voxcomp is probably the most advanced speech synthesis program for the Parrot system. The documentation in the instruction manual is quite good and easy to understand. Best of all, Voxcomp provides your Parrot with a ready-made speech synthesis program. You'll have your computer talking your ear off in no time with the Voxcomp software!

Peripheral Ribbon Connector

If you already own a Sinclair or Timex 16K RAM module, you may have experienced "wobble crash." Because of their awkward shape and possibly a loose connector, these RAMS have been quite famous for dumping your data and programs into oblivion when given the slightest vibration. Several of you have requested a solution to this problem, and so we offer the "Peripheral Ribbon Connector." Just six inches long, this ribbon cable features two firm connector plugs and allows you to set your Timex-Sinclair RAM on a flat surface... where it can't jiggle... and still be plugged in. Those that have tried this cable say it solves the wobble crashing problem and works great for other peripheral modules as well. It comes complete and ready to be configured for either two female connectors or one female and one male.

Shielded T.V. Cable

The unshielded T.V. hookup cable that came with your computer is very much like an antenna. It can and *does* pick up radio frequency interference... which translates into a wavy display on your screen. With just the computer, the interference is hardly noticeable. But, as you add peripherals like RAM's, printer interfaces, keyboards, etc., the interference gets worse.

Our replacement T.V. cable is a high quality *shielded coaxial* cable. It doesn't pick up all of that radio frequency interference and so you get a better picture. The cable is 4 feet long and features the standard jacks. All you have to do to install it is unplug the old cable and plug in the new.

UHF Conversion Kit

As you add more peripherals to your TS1000/ZX81 computer, you'll notice more and more interference in the picture on your TV screen. This is because the standard channels 2 and 3 are extremely sensitive to computer interference. UHF channels are much less sensitive... especially in the area of channel 33. Our UHF Conversion Kit changes your computer output to channel 33 - UHF and clears up virtually all interference. The result is a crystal clear picture no matter howmany peripherals you attach. The kit comes complete with a replacement UHF modulator and instructions. Installation requires some soldering.

(See Order Blank for Prices)

Literature

The Timex-Sinclair 1983 Directory

Now a nationwide best seller, the Directory has drawn quite a following around the world as well. We've sent it to customers in such faraway places as Guam, Argentina, Brazil, Columbia, Germany, England, and Saudi Arabia... to name a few. The whole project has been very exciting for us.

Essentially, the Directory is a reference book for people interested in upgrading their ZX81 or TS1000 computers. It lists and describes practically everything available, contains photographs, and gives a directory of supplier's names and addresses. Some of the topics covered include mass storage devices, printers, memory expansion, keyboards, modems, control circuitry, miscellaneous accessories, literature, programming aids, and software. The software section gives a complete rundown on everything from games to serious technical and business programs. Please note that these are all fully described... not just *listed*. This makes for quite an extensive amount of copy in the book. All told, there are 90 double columned pages in the Directory. The typesetting is all professionally done and the whole thing is bound in a paperback cover.

We used to ship the Timex-Sinclair 1983 Directory by postal book rates. But many of you expressed an urgency for getting the book as fast as possible. So we now ship them all by first class mail. We have them in stock at all times and offer dealer discounts as well.

This *catalog* tells you about everything *we* sell. But if you want to know about everything else that's available... and where to buy it, order your copy of the Timex-Sinclair 1983 Directory. The price is $5.95, postpaid to the United States. Foreign customers please check with your post office for the postage required and include payment with your order. For reference, the Directory weighs 6 ounces.

The ZX/81 Basic Book

Intended as a beginner's instruction book, the *ZX81 Book* is light years ahead of the standard TS1000/ZX81 operating manual. Everything that was only briefly mentioned there is fully explained in the *ZX81 Basic Book*. Topics include looping, flowcharts, graphics, strings, arrays, and the rest of the capabilities of your computer. The writing style presents first an explanation and then actual program examples. If you really want to see what your computer can do, order *The ZX81 Basic Book*.

Mastering Machine Code

Writing programs in the BASIC programming language is convenient and easy to understand. But the resulting programs take up a lot of memory and are usually quite slow... slow while computing and slow to load and save.

Machine Code, on the other hand, is the actual language the computer uses. It's quite a bit more complicated to learn than BASIC, but once you do, you'll have the fastest computer on the block! *Mastering Machine Code* explains the whole process in excellent detail. The writing style is easy to follow and the content is *complete*. This book won't take you half way there! Once you've studied it thoroughly, you'll know how to program in machine code.

This photo shows some of the selections offered in our literature line.

Graphics A-Z

If you're really into computerized graphics, you're going to appreciate this book. It'll tell you how to do animation, 3-D plotting, diagonal scrolling, writing and dissecting uneditable programs, machine code shortcuts and many other programming techniques. Every one of them has a full explanation and actual listed programs for demonstration purposes.

There are even special chapters devoted exclusively to our High Resolution Graphics module. Instructions here include comprehensive subroutine explanations, machine code control, and complete firmware disassembly. This book is a must for all "HRG" module owners and anyone interested in computer graphics.

ZX Microdrive Technical Brochure

Many of you have requested information on the upcoming release of the Timex Microdrive. Timex is keeping quiet about it! However, we *were* able to find out something about the English version and have printed a small descriptive brochure about it. The Timex version should be similar.

TS2000 Technical Brochure

So many of you have requested information on the Timex-Sinclair 2000 series of computers! Although space doesn't permit a description in this catalog, we've published a small brochure which pretty much explains the whole system. This brochure was written from spec. sheets supplied by Timex.

ZTEXT Seikosha Modification Brochure

ZTEXT was an economical word processor we used to sell that was designed primarily for the TS2040 printer. If you own a ZTEXT program, you can modify it to work on the Seikosha full size printer package with these instructions. Full upper and lower case letters are supported and you can even use double size letters!

(See Order Blank for Prices)

Software

In the past, many people have been sucked in by neat *looking* computers with nifty gadgetry. They didn't know that it takes programs to run the machinery and when they couldn't find any, the machines probably either collected dust or served as boat anchors! Even nowadays, new computers are advertised as having plenty of software. But, when you get them home and run the programs, you begin to think you could probably write better software yourself!

As for the TS1000/ZX81, it's had its share of contributions to the above experiences. The fact is, new computers just don't have top quality software until they've been out on the market for a while. But now, with three years of service behind it and over a million owners, the TS1000 software has come of age. In just the past 3 months, some excellent new programs have become available.

The new EPROM programs from MEMOTECH are a fine example. We've tested them side by side with the more widely recognized Supercalc© and Wordstar© software available only for so called "real" computers. Our Memocalc and Memotext software compared very favorably. In fact, we found them much easier to use.

On another front is the development of "integrated" software ... programs that interact with and update each other. This sort of programming has previously only been available on mainframe computers. Now, with the introduction of our "Mega" series of integrated software, your TS1000/ZX81 is capable of the same sorts of data processing.

Even those of you who own the unexpanded 2K computer can now get excellent software. Our line of 2K programs includes some outstanding graphics and games... as well as our new 2K computer literacy series. These new programs actually use the computer to teach computing!

We've "shopped the world" for the best in ZX81/TS1000 software so that you can make the most of your computer. Browse through our selection and read the descriptions. We've made every effort to describe each program as completely as space allows. However, if you need more information, please don't hesitate to call or write. We'll be glad to answer your questions.

Business Software

Spreadsheet Analysis

The use of columnar pads for such things as budgeting, bookkeeping, sales analysis, engineering, etc. ... has been a common practice in business for years. It's often the simplest way to present and store such information. However, construction and calculating such "spreadsheets" can be very tedious and time consuming. Make a mistake, and the whole sheet has to be reconstructed.

Well, computers have changed all of that. The now famous Visicalc© program from Visicorp was the first Electronic Spreadsheet software for the personal computer. Enabling business and technical people to do spreadsheet analysis more quickly and efficiently, it's been said that Visicalc© sold more computers than any other program. Spreadsheets that used to take days or weeks to construct can now be done in mere hours or even minutes.

Essentially, spreadsheet software presents on your screen a grid of columns and rows. You can enter information, equations, and numbers into that grid however you choose. Then, the computer will calculate everything *for* you. Change a number, and the computer can re-calculate the whole grid in an instant.

How might *you* use spreadsheet software? Well, if you're in business, you might use it for spreadsheet bookkeeping. It can automatically keep a record of cash disbursements, bank balance, income,... however you want to set it up. You might set up a spreadsheet for budget analysis. Then, you could try your budget cutting ideas on paper. For example, what if labor went down 10%? Just enter the 10% decrease and the spreadsheet will calculate the whole budget all over again. You can use it for sales analysis, ... sales projections. Engineering and scientific people might use a spreadsheet to store and calculate experimental data ... to make projections from that data.

When choosing a spreadsheet program there are certain things you should take into consideration. Number one, what do you plan to use the spreadsheet for? Will you need large grids? If so, you need one that can use up to 64K RAM. Will you be needing special functions like, Sin, Cos, Tan, etc? Choose a spreadsheet that can use these functions.

There are other important features to look for, too. For example, can it sum up any size of columns and rows without entering lengthy formulas? Can it calcu-

late the grid when there are blank spaces in it? (If not, you'll have to enter zeros wherever you have no data.) How fast does it move about the grid? You can only see a portion at a time on your screen. If your program takes forever to show you the rest of the grid, it might not save you much time. How does it print out? Doing it a screen at a time is fine. But if it automatically prints all the way down your columns, that's even better. If you have an 80 or 132 character printer, will it print more columns? Can it repeat formulas and calculations all the way down a column or row? If not, you'll have to enter separate formulas for each box in the sequence.

As you can see, nothing can be taken for granted when buying a spreadsheet for your TIMEX-Sinclair computer. While there's still no Visicalc© version for this machine, there *are* some very good alternatives. Visicalc© costs about $250.00 anyway. The spreadsheets *we* sell will most likely handle your computing needs just fine ... for under $50.00!

Memocalc (16-64K)

Just released this spring, Memocalc© is the closest thing to Visicalc© for the TIMEX-Sinclair computer. Adjustable for use with 16, 32, and 64K RAM capacities, it offers plenty of room for titles, names, numbers, and formulas. It even comes on a pre-programmed EPROM module so it won't take up any useable memory space.

The size of a Memocalc grid depends on how much memory you have. For example, a 16K system can have up to 1800 cells, a 32K system can have up to 4400 cells, and a 64K system can have up to 7000 cells. The number of cells equals columns times rows. The grid itself can be adjusted to fit whatever use you need. You can have up to 99 columns and up to 250 rows. (As an example, the limit of 7,000 cells on a 64K RAM could be 70 columns x 100 rows.)

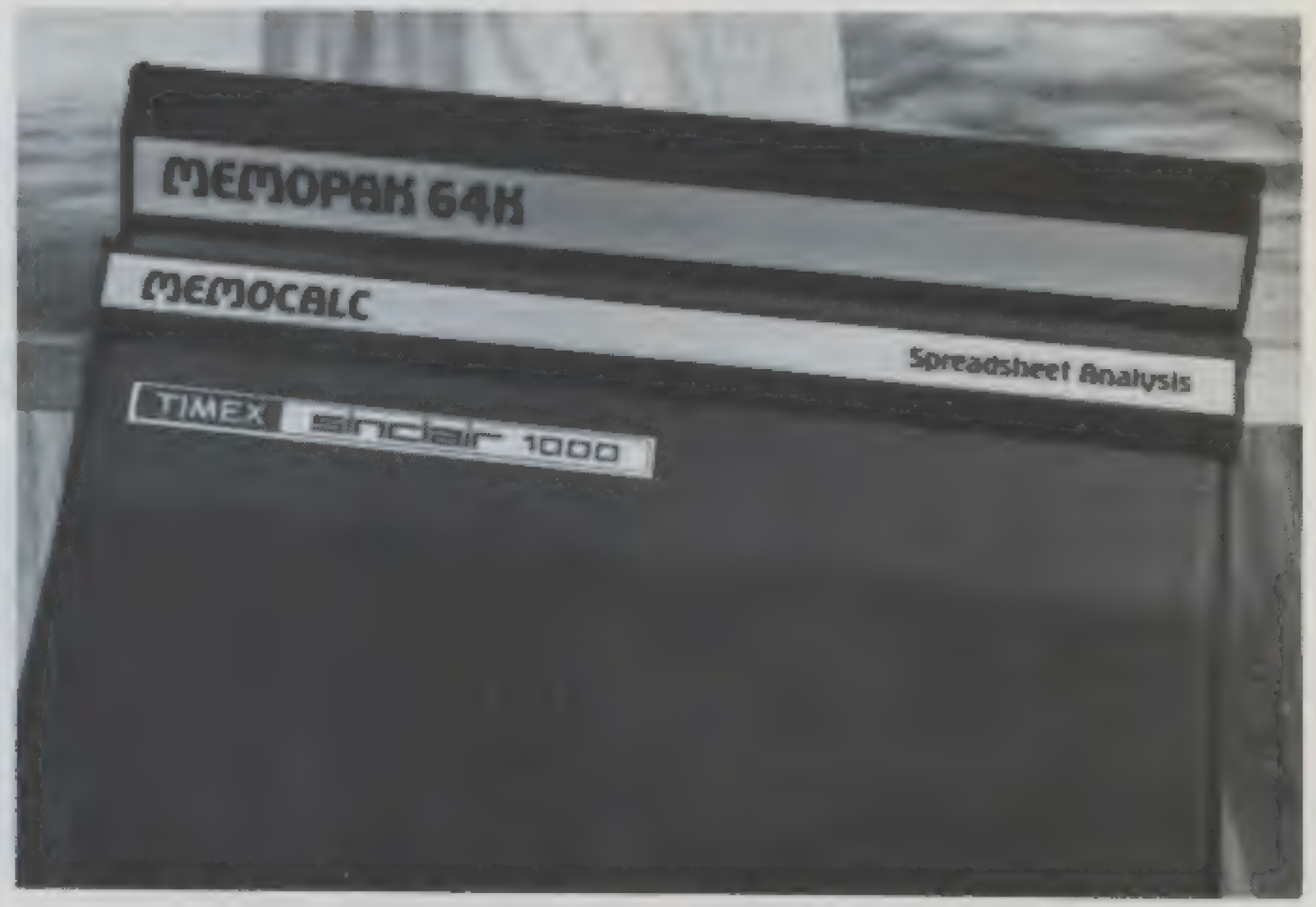
Memocalc is extremely fast. Moving about the grid is instantaneous with simple commands. As you move, the row and column headings stay in the screen ... so you always know where you are. Calculation and set up are fast too. Columns and rows can be subtotaled and/or totaled with a single command. Formulas can be repeated all the way down or partially down either columns or rows. The "YEAR" command automatically labels columns or rows with the months of the year. Blank cells are read as zero during calculations ... this makes template grids possible. For example, if one month's figures don't fill up the pre set grid, you don't have to enter zeros to fill it up. It'll still function just fine.

Engineering and scientific people will appreciate the fact that Memocalc supports all of the mathematical functions on the TS1000/ZX81. This includes the trigonometric functions; ABS, SQR, RND, AND, OR, and NOT ... as well as addition, subtraction, multiplication and division.

One of the things that's especially nice about Memocalc is its printing function. You can choose to print just the screen or the entire grid. If you choose to print the entire grid, it will go right down the columns printing everything there is for as wide as your printer will go. For example, a 32 character printer will print 3 columns plus the headings, an 80 character printer will do 9 columns plus headings, and a 132 character printer will do 15 columns plus headings. Don't worry if your grid is wider than that. If so, Memocalc will automatically shift over and print the rest of your columns.

Another special feature of Memocalc is the "HELP" function. Just press "H" and a menu of all of the functions is displayed under the grid.

Admittedly, Memocalc probably doesn't do everything exactly the way Visicalc© does. But we've found it to do everything we would want it to. And, at a price far lower than Visicalc©. You can get Memocalc for only $48.95! Order yours today, and put that computer to *work!*



Memocalc Spreadsheet Analysis Module.

(See Order Blank for Prices)

Business Software

Data Bases

A Data Base is any software that has the capability to store information. They range in utility from simple lists of telephone numbers, to inventory records, to actual correspondence.

Some data bases are custom designed to do just one thing, like an inventory program. Others have flexibility programmed into them, so that you can custom design your own data base. In the case of these types of databases, you're going to want a marriage of two features: First, you're going to have to decide how easy you want the program to be in getting it set up. Second, you're going to have to decide if you'll trade some user friendliness for more features. All are pretty easy to work with once they're set up, but the set up procedure can be more difficult with some than with others. It's best to get a program that will do what you need it to do and worry about the ease of setting up as a second priority.

Inventory Control (16K)

If you spend too much time updating inventory lists and checking re-order levels, this program will probably prove very helpful. It consists of two programs: Stock I holds approximately 400 inventory lines, with names and descriptions, unit prices, supplier codes, type codes, stock levels, and re-order points. You can easily enter or delete lines, make changes in price or codes, and monitor inventory levels constantly. The computer will automatically display a list of all inventory items, or a breakdown of items by type of supplier ... it will also alert you when anything needs to be reordered.

Stock II is a simpler program with more memory room. It keeps track of up to 2,000 line coded items.

Stamp Collector (16K)

Here's an example of how a data base might work for collecting stamps. Designed by a well known stamp column writer, this program can inventory and store up to 600 Scott numbers. It displays quantity on hand by major classification and is supported by a want list function as well. All functions are completely menu driven.

Word Processing

In some ways, word processing is merely using your computer as a typewriter. In others, it's light years ahead of the typewriter. The software you choose for word processing makes the difference.

If you choose a basic text formatter, you'll have the ability to type on your computer. Text formattors just take what you type, justify the margins, and output to your printer. And that's all.

A true word processor not only formats what you type, but allows changes to be made within your text. It inserts, deletes, and moves portions of text. You can set it up to send personalized form letters. Some word processors even support text and data bases, so that one might draw information from the other and vice-versa.

We've assembled a good selection of word processors in this catalog. The one that follows and the one in our "Mega" series offer a wide range of capabilities and prices to meet every need. Again, feel free to call or write if our descriptions don't tell you enough.

The Organizer (16K)

This is a very versatile data base that has to rank as one of the easiest to set up. Records are formatted like index cards. You simply move the cursor to the spot where you want a title and then type it in. Data fields are set up the same way ... right after the titles.

Once set up, entering information is as easy as typing. The cursor automatically

Memotext Word Processing Module.

jumps to the next field when you press ENTER. (A field is the area of data you defined after each title.)

The Organizer offers some excellent search facilities as well as ordering or sorting. You can search for all or part of a string of information. You can sort both numerically or alphabetically. And, you can print out to your 2040 printer.

Memotext (16-64K)

New out this spring, Memotext is an instant load EPROM program. It plugs onto the back of your computer.

Probably the most immediately noticeable feature of Memotext is its full speed typing capability. Normally, as you get two or three lines of text on your screen, it takes longer and longer for the computer to regenerate the display. So, you end up typing slower and slower as you wait for the computer to catch up. Not so with Memotext. The input routine has somehow been changed and now you can type at full speed! This feature combines quite favorably with a full size keyboard and gives real "serious business" utility to your TS1000/ZX81.

The word processing functions supported by Memotext include text formatting, insertion, deletion, scrolling, search and exchange, and form letters. All keys have full repeat capabilities. Just hold a key down and it repeats.

Memotext supports both text and data files which can be loaded and saved either individually or all together. An application of this feature might be to set up a monthly statement with the text processing features. Then have it draw names, addresses, and account balances from the data files and print individual statements.

Because it can type both upper and lower case letters, Memotext can only be used with a full sized printer and the Memotech Centronics Parallel or RS232 interfaces. It won't print out to the TS2040 printer. The reasoning behind this is simple. In order to imitate a typewriter with all letters lower case unless shifted, the program has to interact with the lower case capability of these interfaces. You wouldn't expect a program like Wordstar© to work with a mini-printer because it defeats the purpose of the program. Memotext ranks with the likes of Wordstar© in this regard.

If Memotext looks like what you want, but you don't have a full size printer, check out our Seikosha Printer Package.

E. Arthur Brown Company/ Datacon Integrated Software

Datacon is a company that has, in the past, been involved with software for mainframe computers. They have several years experience in creating programs that integrate with and update each other within the databases of huge corporations and government installations. This sort of programming has rarely been available for personal computers much less the TIMEX Sinclair 1000.

When Datacon approached us with the idea of marketing integrated software for the TS1000/ZX81, we were definitely interested. What came out of it is our "Mega" series of integrated software. These are programs which dimension themselves for whatever RAM you have. They can save *data* to tape...*without the program.* This means programs can *read* data tapes! Not only that, the data tapes can be read by other programs within their integration group. For example, the "Mega-Plot" program can read data from the "Mega-Calc" data tape and produce graphic illustrations of your spreadsheet data! The "Mega-Earn" program can read "Mega-Bill" data tape and post the accounts receivable information.

There are two basic integration groups within the "Mega" series. They are the Mega-Master group and the Mega-Wealth group. A third, the Mega Home group consists of 3 non-integrating programs.

The Mega Master Group

Mega-Desk (16-64K)

A terrific idea that's finally reality, the Mega-Desk program is an all purpose, all day long, administrative tool. Load it onto your TS1000/ZX81 in the morning and leave the computer on all day. It provides you with a data file for addresses and phone numbers, a note processor for use with your TS2040 printer, a calculator, an appointment calendar, a "things to do" reminder, and with a modem it sends and receives electronic mail. Anyone who works at a desk can appreciate Mega-Desk. Think of all the paper references you'll be able to do without..., you won't need a calculator, pencil, appointment book, phone and address book, or a scratch/memo pad.

Mega-Desk is a mini combination of the rest of the programs in the Mega-Master group. It can interact with any of them for further capabilities in that particular specialty. Looking at different sections of it is much like the overlay graphics features of the new Apple Lisa® or Visi-On® software.

Mega-Calc (16-64K)

An electronic spreadsheet, this program offers a few features our other spreadsheets don't. For one, the column widths are adjustable. If you need more

(See Order Blank for Prices)

than 8 digits per column, you can set up Mega-Calc to give you more. For another thing, Mega-Calc can read and summarize a series of other spreadsheets from cassette tape. The labels follow your window on the grid, so you'll always know where you are. The size of the actual grid depends on how much data you put in. But a good estimate for a 64K configuration is approximately 60 columns by 60 rows. Blanks are calculated as zeros, and columns and rows can be summed.

Mega-File (16-64K)

You can set up records with up to 18 data fields with Mega-File. A 64K configuration holds approximately 500 records, which makes zip coded mailing lists useful. Records can be searched, edited, updated, altered, sorted, dated, calculated, merged (great for mailings), and printed. Sorts can be done based on a major and a minor criteria, allowing for very specific record selection. The printout can be set up however you want it and the graphics are really quite professional looking. Output is designed primarily for the TS2040 printer, but alterations can be made.

Mega-Lex (16-64K)

Here's a super word processor that, for the time being, is designed primarily for the TS2040 printer. It features Tab, delete, and justification of margins. You can insert or delete lines, blocks of text, or entire, paragraphs. You can move text sections as large as a whole block of text or as small as one word. An especially attractive feature of Mega-Lex is a Lexicon. You can set it up to remember a graphic letter head, standard salutations or closings, addresses, etc. This is very handy for making your memos appear distinative. Just recall them from the Lexicon when you need them.

Mega-Plot (16-64K)

A fine graph producing program, Mega-Plot takes whatever data you feed it, either through the keyboard or from data tape, and illustrates it in a graphic way. Several forms are included along with digital summaries.

Mega-Stat (16-64K)

Perform sophisticates statistical analyses on business and personal data. Enter the data either through the keyboard or from tape and then watch it appear in graphic and digital statistical terms.

The Mega Wealth Group

Mega-Bill (16-64K)

This is an invoicing program with automatic entry of constants... such as sales tax, freight, handling, prices, item descriptions, etc. Use the Mega-Bill program to invoice your customers and then feed its data tape to the next program to post the information.

Mega-Earn (16-64K)

This program handles posting to all accounts and develops a sales journal with statistical totals. It also develops a cash receipts journal, performs aged trial balances on receivables, and many other functions. Quite a useful program for the small businessperson.

Mega-Pay (16-64K)

Here you have a facility for handling your payables. Mega-Pay posts your payments to their proper accounts, produces an accurate check register, and even has a facility for preparing check stubs (with your 2040 printer).

Mega-Net (16-64K)

Use this program to develop Profit and Loss Statements, as well as Balance Sheets from the data the above programs produce. Feed it their data either manually or on tape and watch it do the work. Why fool around with all of this tedious calculating when "Mega" software will do it for you?

Mega-Stock (16-64K)

Probably the best inventory program now available, Mega-Stock does more than just record what you have on hand. It also tracks backorders, vendors, stock values, quantities on hand and minimum balances. With this program you can keep as tight a rein on inventory as companies with million dollar computers.

The Mega Home Group

Mega-Probe (16-64K)

A self analysis/self improvement program, Mega Probe gives you IQ tests, Aptitude tests, etc. and shows you your weak points. You can improve on them and then retest yourself to see how much better you've become. Use this program to find the right sort of career for your capabilities. Use it in the classroom to measure students' progress. There are literally hundreds of ways to use Mega-Probe for home, business, or education.

Mega-Plan (16-64K)

A mini-combination of the programs in the Mega Master and Mega Wealth groups,

Mega-Plan is a household financial tool. Use it to put all of your personal finances in one package for analysis. Assets and Liabilities are graphically illustrated, allowing for more accurate planning of your financial future.

Mega-Mail (16-64K)

Use this program in conjunction with a modem and you can process electronic mail. Send and receive letters over the phone with your computer.

Since the Mega Integrated Software separates data from programs, you might suspect it would be quite suitable for use with disk and stringy floppy drives. This is true and when the Timex microdrive comes out, we'll be offering up-date programs for approximately $10.00 each. At present, this is kind of up in the air... not knowing the where and whatabouts of the microdrive. You might convert to disk and stringy successfully yourself, however. At this writing we don't know how "user-possible" that is. At any rate, the "Mega" series of integrated software is a tremendous step forward for Timex-Sinclair computing.

The Money Handlers

Checkbook Manager (16K)

This program keeps track of your personal or business checking account and will store banking transactions, keep a running balance of the account, and sort transactions a number of useful ways. Up to 250 transactions per session can be stored in the computer. And, on 1 90 minute cassette, you can store up to 3,600 transactions.

EZ Bookkeeping (16 & 64K)

Use your TS1000/ZX81 to keep accurate business reocrds. The EZ Bookkeeping software is modeled after the famous Dome© brand bookkeeping systems. It keeps track of payables, receivables, expenses, vendors, and customers. The 64K version even features a checking account manager.

Sales File (16 & 64K)

These are general purpose business programs. They function something like a cash register... calculating totals and adding sales tax. But they also keep track of inventory, automatically or manually updating it. Wholesale and retail prices are kept record of and used to calculate profits. The 16K version holds up to 125 products and 25 accounts, and the 64K version holds up to 600 products and 100 accounts.

Cash Register (16K)

Your TS1000/ZX81 can total, figure sales tax, clear, and keep daily totals with this program. It's a menu driven program, so it's easy to use, and all data is automatically saved to cassette.

Investment Analysis

IRA Planner (16K)

With today's ups and downs in the economy, it's often hard to tell just how well your investments are doing. And,that goes for your IRA as well. Our IRA Planner software can help. You enter your regular contributions, inflation rate, and interest,as well as other important variables.The computer then calculates how much money you'll have when you retire... in both real and inflationary dollars. Use this program often to analyse, plan, and make changes in your Individual Retirement Account.

Real Estate Investment Analysis (16K)

Don't take a Realtor's word for it! Before you buy any real estate,.... whether a home or income property, check it out with this program first. For your personal residence, you may be better renting! That's right. With the high interest rates and sluggish market, you may be putting more into buying than you'd get out. Or, buying might still be the ticket. Conditions are different depending on where you live. This program takes into account the myriad factors affecting your local real estate market and gives you a recommendation to either buy or rent.

If you wish to invest in rental property, the second part of Real Estate Investment Analysis is for you. It figures expenses, depreciation, taxes, inflation, etc., and tells you what a property is worth. Get yourself a step ahead of other investors... use a computer to analyze your property!

(See Order Blank for Prices)

The Stock Option Analyzer (16K)

If you've got options to buy stock at special prices, how do you know when would be the best time to buy - sell? This program will tell you. It provides information such as unexercised return on investment (R.O.I.), annual R.O.I. and Net worth. Don't take the opportunities of stock options lightly! Capitolize on them in the most efficient way... with your computer!

Portfolio Analysis (16K)

A lot of factors influence the relative risk vs. return on investment for stock investors. Like anything else, it's no piece of cake making good money in stocks. The most successful investors are those that can get a maximum return with the least amount of risk. This takes a knowledge of areas where the market is most sensitive to change and an analysis of the risk involved. That is, is this particular sensitive market more apt to go up or down? Our Portfolio Analysis software performs these subtle calculations for you and finds a portfolio with the least amount of risk for sensitivity. That sort of combination gives the best chance for profit.

Stock Market Tech.Analysis I (16K)

A menu driven program, this one gives a technical analysis of price and volume data in the stock market. You can use this information to forecast the direction of the market or of any individual stock. It takes 30 days of trading data, closing prices, and day's volume, and produces a one page analysis of technical position of each stock average. It also generates graphic illustrations of the stock's activity. Quite an investment tool, this.

Miscellaneous Business/Personal Software

Schedimort (16-64K)

If you have to borrow money for anything, be it a car, business, or a home, use this program to find out what your payments will be. Use it to find out how much interest you'll pay... to weigh the advantages of larger or shorter terms. Schedimort produces an amortization schedule for any loan. It prints out to either your 2040 printer or a full size printer and gives your payment number, amount, principle, interest, and balance remaining. A real handy thing to have for all sorts of borrowing. Real Estate agents will especially like having the ability to provide a computer printout amortization schedule to their clients. This is the very same schedule banks hire computing firms to produce.

Critical Path (16K)

How many times have you brought a project to within a hair's breadth of completion only to find that one aspect of it would take extra time? There you sit, waiting for that one thing to be comleted before the rest of the project could continue.

With this catalog, it was the color separations for printing the cover. But, it didn't hold us up! That's because we used the computer to analyse the critical path before we started. We spotted the color separations right away and rescheduled our photography to allow for the extra time the color separations would take. Everything went as smooth as clockwork!

Our Critical Path Analysis software can help your projects, too. Use it to pick out and solve bottlenecks, monitor costs, and spot the effect of tiny delays in scheduling. Applications include construction manufacturing, marketing, public administration, and office management.

Execu-Soft Small Business Package (16K)

Sinclair and TIMEX made the computer that made data processing affordable for anyone. Now, the Execu-Soft package will allow any small business to computerize! The complete package consists of an inventory system, an appointment scheduler, an address and phone directory, a customer credit file, an accounts receivable, accounts payable, and a general ledger.

The inventory program holds up to 150 items as well as the date, description, quantity, unit price, up-dates, catalog number, category code, and item number. Updates are done automatically whenever revisions are made. The Execu-Diary appointment scheduler keeps track of an entire month's agenda. Records appointments to keep, meetings to attend, deadlines to meet, phone calls to make or work projects to be done. The address and phone directory puts 100 important addresses and phone numbers at your immediate access. No need for a Rolodex or other card file, this program puts it all right into your computer. The customer credit file keeps an itemized record of the details of credit transactions, discounts, payments, balances, and credit ratings. Updates and revisions are easily made.

The guts of the Execu-soft system is in the accounting end of it. Accounts payable keeps track of your liabilities. It provides complete information on your creditors, amounts owed, payments made, etc. Accounts receivable keeps complete track of all customers that owe you money. It ages accounts giving 30, 60, and 90 day balances due, total owed to date, and total income outstanding. Accounts are matured automatically, so there's no checking through account cards, invoices, etc. The

general ledger program compiles all of your accounting information and posts it automatically into categories of balance asset and balance liability sheets, income statement, working journal, and cost of goods sold. These categories can be custom set up to match your business. The program supports an income statement, profit and loss sheet, and balance sheets. Remember, all of this is done in a fraction of the time it normally takes because you use your computer!

Execu-Soft consists of 7 individual program cassettes and a comprehensive instruction manual. You can run your entire business with it program by program or, with the right equipment, all at once. For example, you can have instant access to any one of them at any time with our Basicare system. The combination of a Persona, Minimap, and two 64K RAM modules would hold all seven programs at once right on your desk. You would load everything in the morning and then leave the computer on all day. Access to your files would be faster than any disk because all of the information would be in RAM! Or, if these jobs are handled by separate employees, you might supply each individual with their own computer and 16K RAM module. Load in the beginning of the day and leave the computers on until closing time. You can probably come up with your own special hardware/software combination to better suit your needs. The important thing is that now you can have a machine handle the tedium of business paperwork... and you'll have more time to spend your profits!

Execu Soft, Software for small businesses.

(See Order Blank for Prices)

Arcade Games

Frogger (16K)

The TIMEX-Sinclair version of the popular Frogger arcade game. Your frog must hop across logs, crocodiles, and turtles to reach his sweetheart on the other side of the river. As play progresses, you have to avoid highway traffic as well. One or two players can participate.

Krazy Kong (16K)

Similar to the Donkey Kong® arcade game. Reach the damsel in distress at the top of the sky scraper as Kong tosses obstacles in your way.

Mothership (16K)

One of the two truly 3-dimensional games we carry, this one is amazing! As you sit in the cockpit of your Starlight Fighter, you can see the sides of the Zorway space corridor mere inches from your wings as you scream through it. There's plenty of Starship blasting and fancy flying with 3-D all the way. A very exciting game as you pursue the Mothership.

City of XON (16K)

Similar to the popular ZAXXON® arcade game, this one also has 3-D graphics. As you fly through the city, your shadow follows and the buildings scroll by three-dimensionally. You have to evade missiles, force fields, parapets, photon batteries, and more. Two firing modes knock out targets as you tally up points. Shooting invaders is tough in 2 dimensions, but with these high speed 3-D machine code graphics, it's the ultimate challenge!

ZXAK-MAN (16K)

Similar to the popular PACMAN© arcade game, you'll like the graphics of ZXAK-MAN. ZXAK has an eye that winks and a mouth that gobbles up dots. The goblins lose their bodies and run around with just eyes showing. The object is to gain points eating dots. There are nine levels of play as well as the ability to add more levels through program adjustments (Instructions are included).

Keystroke Management (2K)

Four 2K games for business people. Play "Musical Desks," "Corner Office," "Automation," and "Go To The Top"... all on the 2K TS1000!

Working Mothers (2K)

Four 2K games for women. These are an excellent way to learn about computers and stay ahead of the children. Includes "Mad Dash," "Shopping Mall," "Carfool," and "Harried Housewife."

2K Games Sampler

Includes "Kamikaze Fly," a dexterity game in which Freda The Frog tries to eat dinner, "Sketchpad," and easy to use screen drawing program; "Navajo Rugs," which generates kaleidoscopic patterns randomly; and "Biorythm," which plots your mental, physical, and emotional states on any given day.

Adventure Games

Quest for the Holy Grail (16K)

As a daredevil archeology professor, you search for the Holy Grail on a lush volcanic island. Read the clues, outwit the Nazi, evade the hungry cannibals, and descend into the underground passageways that lead to the Holy Grail. Hours of fun!

As an added bonus, we've included "The Elusive Mr. Big"... another adventure game with this package. You play a famous detective and try to find "Mr. Big" before your time runs out.

Space Commando (16K)

The Amalgomation of Friendly Planets has commissioned you to infiltrate their arch enemy's space colony and defeat the evil android army before it can rally and attack the Amalgamation. The bad guys are really evil in this game, so be prepared for some pretty gruesome clues.

Shark's Treasure (16K)

Find the sunken treasure, dive for it, and bring it to the surface to become a millionaire. Sounds easy? Oh, I must have forgotten to tell you about the sharks! A very "clueful" and exciting program.

Making Treks (2K)

These unusual 2K variations on adventure games take you from the calm Pacific to the frosty Himalayas. You may find yourself riding a camel, floating in a hot air balloon, or steaming along in a slow boat to China. Includes four games: "Bon Voyage," "Blue Pacific," "High World," and "Welcome Home."

Intellectual Games

Super Chess (16K)

The ultimate strategy game is now also a computer game! Play chess with your computer and match your gut instincts with the wonders of computer logic. You'll probably lose! With 10 levels of play, tactical or positional evaluation, move analysis, all legal moves, standard openings catalog, excellent graphics, display of up to 15 previous moves, and computer recommended moves, this is the best computer chess game available. For an education, there's even a "self play" mode that lets you watch the computer play itself.

Mind Bogglers (2K)

Four brain testing, brain twisting trials and triumphs. How good are you at left-brain (analytical) and right-brain (spatial) mental gymnastics? Four games will test you: "Sinclair Towers," "Eye-Q," "Dots and Spots," and "Seven Bridges."

Mind vs. Machine (2K)

"Tic Tac Toe I and II," are variations of the classic strategy game. "Chocolate Truffles" makes you plan ahead to get the last truffle. "Superspy" gives you a chance to decode secrete messages smuggled out from behind the "silicon" curtain!

Educational

Math Quiz (16K)

Choose addition, subtraction, multiplication, or division and feed up to 50 problems into the computer.

Students can then be tested by computer. Difficulty levels range from 1 to 6.

Super Math (16K)

Drill yourself in the 4 basic math functions with 5 levels of difficulty. Each problem is graphically depicted and a final grade is given after each 10 problems. An excellent teaching facility that provides ongoing feedback as students progress through each challenging level of difficulty.

Spelling (16K)

Enter up to 50 words and then let the computer drill students on their spelling. Words are flashed briefly (actual time period controlled by you) and then students must try and remember the spelling. Misspelled words can be listed afterwards and word files can be saved on tape.

Punctuation (16K)

Usually this is pretty dull stuff. But the computer makes it interesting. This program teaches the basics of correct usage of periods, question marks, commas, etc. It also reinforces the understanding of these tools with practice exercises using a timed test.

German (16K)

Can an American learn German on an English computer? You bet! This program teaches the basic vocabulary and phrases of the German language. Over 240 words and 50 phrases are taught, giving the student or traveler a crash course in foreign communication. If you're going abroad, this and the following two programs are an absolute must!

French (16K)

Again, learn a language by computer. 240 words and 50 phrases. These are the conversational items most commonly needed in a foreign country.

Spanish (16K)

240 Spanish words and 50 phrases are taught by computer. The program is completely menu driven for easy use.

Flight Simulator (16K)

Learn the basics of instrument flight with an artificial horizon and full instrumentation. It's not as easy as you might think! After using a map and radio navigation beacons you'll hopefully be lined up with the runway, ready to land, and still have some fuel! Landing is an altogether different proposition. A visual runway is displayed along with your instruments and you must descend at the right rate not to crash and not to overshoot. Graphics are excellent and the techniques are challenging. It'll take you a while to master it... then you can add wind effects!

Astronomer's Guide (16K)

A two program combination, this software contains an astromap and a conversion system. Astromap gives you info on 800 stars, clusters, galaxies, nebulae, etc. stored in your computer. All menu driven. Conversion teaches astronomical time and coordinate conversions for the experienced astronomer.

Super Doodles (16K)

An excellent teaching aid to acquaint youngsters with the computer revolution. It allows the student to pick up characters from the top of the screen and move them about to create drawings. There's even a fast and slow "pen" feature to move the cursor at variable speeds.

Teacher's Gradebook (16K)

Businesses and professionals keep their records on computer and now so can teachers! This program allows entry of students' names and their test scores. It then enables more accurate accounting for test performance and helps figure final grades. Teachers' Gradebook removes most of the tedium of keeping grade records and frees your brain for the more creative aspects of teaching.

(2K) Computer Literacy Series

Each of these four cassettes contains four Programs to help beginners understand computer relationships and proramming.

Gridlock (2K)

A series of four programs which develop the user's skills at Cartesian coordinates. Each program is actually a game in which you must master some aspect of the coordinate system to win. Concepts that used to take weeks to teach in school are mastered in minutes with "Gridlock"

Truth Tables (2K)

Another series of four programs, these teach logical relatonships. Students learn the correct use of AND/OR statements, greater than, equal to, or less than, numerical relationships, and IF/THEN statements.

Snake Eyes (2K)

In this four program series, users learn the definition of randomness and the implications of probability theory. This series can be used at many levels of instruction ranging from beginners' use of the randm number generator to statistical analysis.

Basic BASIC (2K)

This is a series of programs which take the beginner from ground zero through the construction of a simple computer game program. They use a "program by example" technique, since it's easier for beginners to modify existing programs than to start from scratch. And, you can use these programs just as easily with the Timex Sinclair operating manual as without. The package contains the programs tape, a blank tape for saving your work, and a workbook that includes diagrams, tips about easy ways to edit programs, and LOAD/SAVE techniques.

(See Order Blank for Prices)

Programming Aids

Memo Assembler (16-64)

Machine code programming goes so much faster with this EPROM loaded software. First you enter and edit your source code. Then, the Memoassembler puts it all together in machine language. You *do* need knowledge of machine language programming. But Memo Assembler makes it easier for you.

M-Coder (16K)

For those of you not familiar with machine language, M-Coder is the key to faster running programs. You write and debug your program in BASIC and then M-Coder compiles it into high speed machine language. It supports the basic math functions but not trig. and logic. Those sorts of programs you'd have to compile partially in BASIC and partially in machine language. M-Coder makes for much faster program execution no matter how you slice it!

Memo Assembler (Z80 Assembler) Module.

Graphics Kit (16K)

This program provides 23 machine code routines that give you control over the TV screen. "DRAW/UNDRAW" is a function that draws or deletes whatever graphic figure you want. The figure is then defined in a REM statement of your program. You can define as many different shapes as you like and draw/undraw them at any screen position you choose.

The "BORDER/UNBORDER" function draws or deletes borders around the edges of your screen. The border is then protected as long as the foreground is on. The "FOREGROUND ON/OFF" function is used to protect existing shapes or characters on your screen. When it's "ON," new shapes will appear to slide behind and re-emerge from other shapes.

"REVERSE" converts all characters to their inverse video appearance. You can control "REVERSE" with the "FILL" function. This function fills any number of lines you specify, starting at any line you specify, with whatever character you choose.

The ***Graphics Kit*** also provides print position controls. You can alter your next print position by indicating "UP," "DOWN," "LEFT," or "RIGHT." The "EDITPRINT" function automatically moves the next print position to the first edit line.

The kit also provides you with complete "SCROLL" facilities. "Upscroll," "Downscroll," "Rightscroll," and "Leftscroll" allow you to scroll in any direction you wish. You can use the "ONSCREEN/OFFSCREEN" function to turn your screen on and off. This would be handy when your computer is in "FAST" mode ... you wouldn't have to look at that gray image while the computer was working.

The "SEARCH AND REPLACE" function will search the screen for every occurence of a character you specify. Then it will replace that character with any other character you want.

The "BACKGROUND ON/OFF" function fills the screen with whatever character you specify. When the background is "ON," existing information is unaffected and shapes will appear to pass in front of it without deleting it.

All of these routines are in machine language. So, they'll respond faster than routines you could write yourself in BASIC. When you load the ***Graphics Kit***, it positions itself at the top of your RAM. That way you can load your own program (or write a new one) without deleting it.

Ordering Information

Mail Orders:

Use our order blank or any stationary. Be sure to give complete shipping information (Name, Address, etc.), and include your account number. This number allows our order processing department to process your order approximately four times faster. It appears either above or to the right of your name on all correspondence, mailing labels, and packing slips we've sent you. If you're a new customer, we'll assign you a number upon receipt of your first order. Please add shipping charges as they are shown in the shipping chart below. Minnesota residents please add 6% sales tax. Mail your order to:

E. Arthur Brown Company
Dept. EB2
1702 Oak Knoll Drive
Alexandria, MN 56308

Or, you can place your order by telephone and charge it to your VISA or Mastercard. Please call 612/762-8847 or 612/762-1631 between 8:30 AM and 4:30 PM Central Standard Time. Be sure to have your order ready for our operators.

Payment Method:

All payments must be in U.S. funds, payable to E. Arthur Brown Company and collectible in a U.S. bank. We will return any foreign checks. International Money Orders are accepted, provided they are in U.S. dollars. We accept VISA and Mastercard credit cards. Purchase orders are accepted only when accompanied by payment. Your Purchase Order number will appear on your packing slip.

Domestic Orders:

Surface orders are sent by the best and most economical way. Be sure to give an accurate street address, since we use UPS delivery whenever possible. Priority Air deliveries are sent via UPS 2nd Day Air service. Use our shipping chart to figure charges.

International Orders:

Credit Cards are preferred to simplify collection of freight and handling charges. Use the shipping weights listed in our price list when figuring the charges with our shipping chart.

Back Orders:

We process orders immediately upon receipt. In-stock items are shipped the next day or within two days at the latest. Occasionally, on orders for multiple items, we may have one or two items on back order. If so, we will ship the rest of your order immediately and the back ordered item(s) as soon as we have it in stock. We pay all additional shipping charges that result from back orders. In any case, if there is a delay in filling your order, we will send you an FTC notice card within 30 days. You may cancel your order for a refund at any time prior to our shipment. However, please allow at least 14 days for delivery.

Customer Service:

If you have a problem with any of our products, call our customer service department. Most problems are solved over the phone. However, if you find it necessary to return an item, please:

1) Pack it carefully and include a copy of your receipt.
2) Write and enclose a letter describing the problem and what you want us to do about it.
3) Insure and mail the parcel to us.

Orders damaged by the common carrier should be kept in their original shipping container. Call us or the common carrier for handling instructions.

Prices:

Our prices are subject to change without notice. If you're not sure of a price, please call or write and we'll send you a current price list. From time to time, we also run advertised special prices in magazines. To qualify for these prices, your order *must* include the Department number mentioned in the ad or the name and issue date of the magazine. Advertised specials expire one month after publication.

Our Guarantee:

All hardware items carry a 90 or 180 day manufacturer's warranty as well as our 10 day, money back, free trial guarantee. Try any hardware item in this catalog for 10 days. If it doesn't work, is incompatible with your system, or you just don't like it, send it back within 10 days of receiving it. As long as the product is in new condition, we'll either exchange it, refund your money, or credit your credit card for the full purchase price. Our only condition is that returned items must be in new condition, in their original containers, with all instructions, literature and documentation intact. Merchandise with modifications such as velcro stickers, rubber feet, tape, etc. will not be accepted.

All software programs are guaranteed to load and run on your computer. Defective programs may be exchanged for functional ones.

Shipping, Handling, & Insurance Chart

U.S. ORDERS

Order Total	Surface	Air
Under $25.00	$1.95	$ 4.50
$25.01-$50.00	$3.95	$ 6.50
$50.01-$100.00	$4.95	$ 8.50
$100.01-$150.00	$5.95	$10.50
Over $150.00	$6.95	$16.50

FOREIGN ORDERS

Service Fee..... $2.50
Plus the following charges:
Surface.....$4.00 + $1.00 per lb. over 2 lbs. *
Air Parcel.....$7.00 + $1.50 per lb. over 2 lbs. *
*Use the shipping weights from price list for figuring.
Additional charges will be billed for collection upon delivery.
Shipping charges for *Software* to Canada are $2.00 per item.

E. Arthur Brown Co.
1702 Oak Knoll Drive
Alexandria, Minnesota 56308

BULK RATE
U.S. POSTAGE
PAID
PERMIT No. 75

RETURN POSTAGE GUARANTEED